

**Broadband Deployment Plan
For
Upper Eastern Shore
2012**



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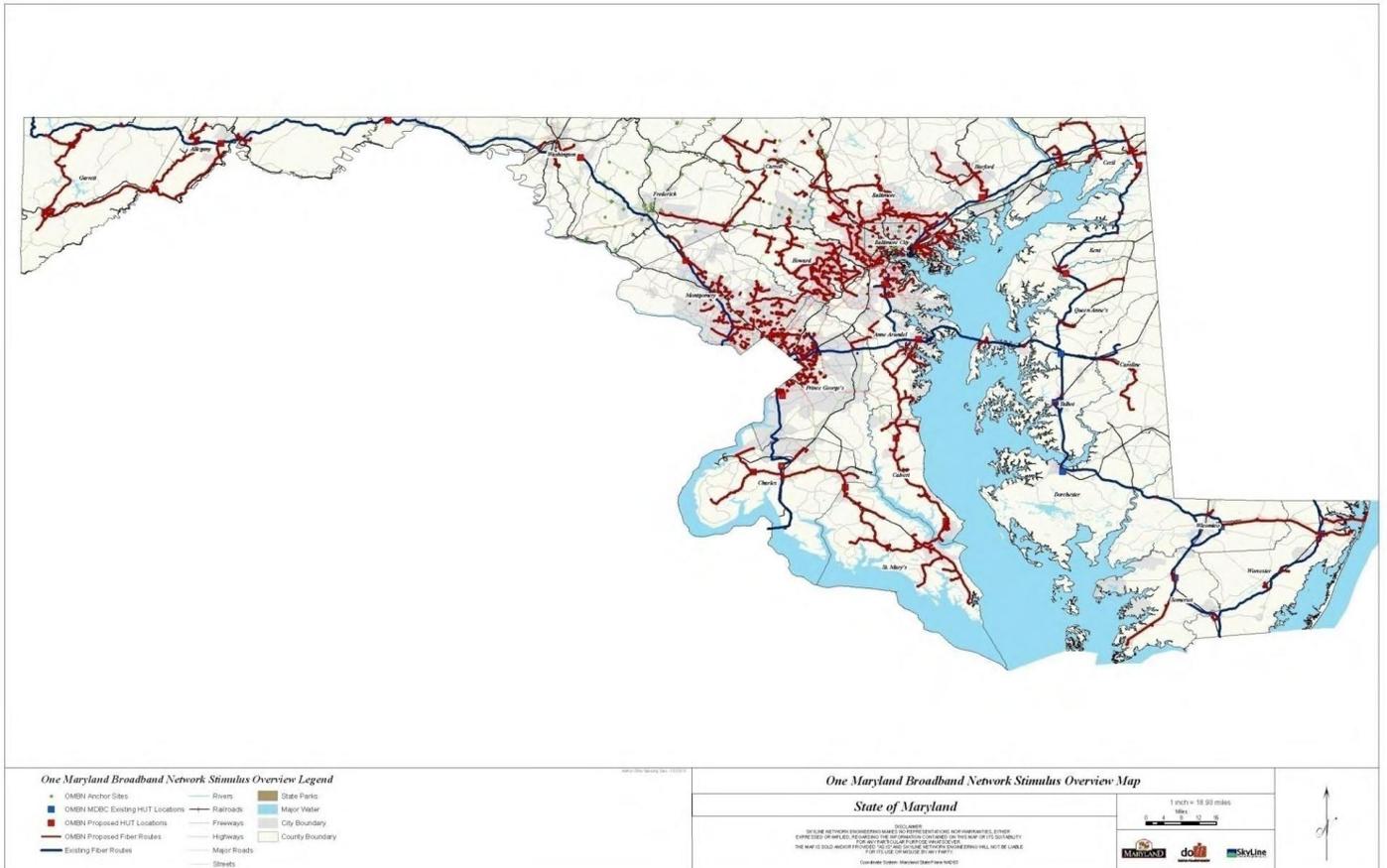
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Scope of Plan

The purpose of the broadband deployment plan is to bring attention to the disparities in broadband access for rural Maryland areas. The plan is meant to outline a strategy to resolve these disparities and bring high quality, low-cost, broadband service to rural Maryland.

Figure 1: One Maryland Broadband network Stimulus Overview Map



Executive Summary

This Broadband Deployment Plan is part of the requirements of a State Broadband Initiative (SBI) grant for Broadband Mapping, obtained by the Maryland Broadband Cooperative (MdBC), funded by the American Recovery and Reinvestment Act (ARRA) and administrated by the National Telecommunications and Information Administration (NTIA) which is part of the U.S. Department of Commerce. The Mid-Shore Regional Council as a sub-recipient of the Maryland Broadband Cooperative's grant is responsible for the development of this plan. The purpose of the Broadband Deployment Plan is to bring attention to the disparities in broadband access for rural Maryland areas, including the region of the Upper Eastern Shore. The primary objective is to continue and build on the ongoing efforts to bring high quality, low-cost, broadband service to rural Maryland. The Council has been assisted in the development of this plan by the Business, Economic and Community Outreach Network (BEACON) of the Franklin P. Perdue School of Business at Salisbury University.

This Broadband Deployment Plan studied the potential challenges in implementing broadband in the Upper Eastern Shore, ways to overcome those challenges and benefits to the Upper Eastern Shore residents and businesses. This plan also outlines ways to further increase broadband access and to reduce price disparities as a way to enhance the quality of life of the region's residents and to provide the required infrastructure to further support the region's economic and public anchor institution activities.

Some of the overarching goals addressed by this broadband deployment plan for the Upper Eastern Shore are being accomplished through a current build-out which is part of a \$158M Broadband Technology Opportunity Program (BTOP) grant awarded through the ARRA to the State of Maryland's Department of Information

Technology (DoIT). DoIT, as part of a public-private consortium, is deploying the One Maryland Broadband Network (OMBN) with the primary purpose of connecting 1,006 Community Anchor Institutions (CAI) throughout each region in the state. The project seeks to promote affordable and abundant broadband in each of Maryland's 24 jurisdictions. The nearly 650 miles of new fiber in the rural portions of the state would substantially improve public safety, government services, healthcare delivery, and education, offering Community Anchor Institutions access speeds between 10 Mbps and 10 Gbps (See glossary of abbreviations for this and other abbreviations used throughout this plan).

Another issue of concern in any regional plan is the impact of the planned activities on the environment. An Environmental Assessment conducted on behalf of OMBN concluded that fiber construction will not be hazardous to the construction sites' soil content nor will it cause harm to the water resources near the construction area. In fact, by enhancing the efforts to gather and use vast amounts of data required to attain high levels of technology mediated sustainability efforts, fiber optic construction in the Upper Eastern Shore will actually be a net contributor to a "Greener" future. The green future would be a result of the increased ability for employees to telecommute from home reducing gas emissions from their vehicles. Similarly, the employees would not need to travel long distances to attend a seminar or conference because increased broadband access online seminar (webinar) and teleconferencing would be possible. This would also result in reduced gas emission via any mode of transportation. Ability to work from home would lead to the reduction in out-commute patterns in all three counties.

In addition to technological adaptability and agility, issues such as infrastructure, geography, and service provider relationships will need to be considered on an ongoing basis for the success of continuous broadband deployment. Efforts to successfully implement fiber optic broadband will definitely be rewarded by narrowing of the technological gap between rural regions and metropolitan areas

and allowing developing areas to compete for economic excellence on a level playing field.

The single most important determinant of how the Upper Eastern Shore will be able to succeed in implementing its broadband deployment plans is how “Last Mile” issues will be handled. Last mile issues connectivity is a significant challenge broadband access for rural Maryland. In many cases, service providers in the rural areas of the region are unable to financially justify the upfront investments required to provide last mile services due to low user densities.

Building and maintaining public-private partnerships to consider ways in which the cost benefit equations are improved, using public support where required should be considered to reduce the difficulties inherent in providing last mile solutions. It is hoped that the findings and recommendations presented in this regional broadband deployment plan will be used by municipal, local, state and federal programs, in partnership with private and non-profit sector stakeholders, to advance the deployment of a universal public/private broadband network for the Upper Eastern Shore.

The planned activities towards universal broadband would improve the ability of the region to continue to support Federal operations in the region and enhance planned community, economic, and workforce development efforts. As the coverage issues are addressed through these activities, attention also needs to be focused on speed and capacity issues as demand increases and usage requires higher speeds and capacity. This plan has also addressed some user category issues by segmenting the broadband user market first between residential and organizational users, and second, by segmenting organizational users into light and heavy users.

A key development at this time is the continued technological change that is being captured by the Long Term Evolution (LTE) mobile technology which is based

on the better utilization of existing radio frequency towers. LTE serves as a way to provide faster service over a larger area without the cost of fiber installation. This appears, at least at this time, to be the most feasible way to deal with some of the “Last Mile” issues. Verizon is in the process of deploying 4 G LTE throughout Maryland as many other last mile service providers in the future. This deployment will be part of a solution to the last mile service needs for residences, businesses and public anchor institutions. Fiber to the 4 GLTE Towers will continue to be required to support the quality and capacity of the wireless signals to various customers.

An important issue that is not yet fully resolved is the role of government in dealing with some of these current and potential impediments to universal broadband access, including current and future speed and capacity issues, maintenance and control of infrastructure issues, and future planning efforts. As demand for broadband continues to increase, the upfront and future ongoing infrastructure investments’ need for funding is critical. Occasional bursts of stimulus spending are not a sustainable way to accomplish this. Therefore, the question of a fiscal mechanism to provide the needed funds and the private-public mechanisms for deploying such funds need to be developed, sooner rather than later.

Finally, all plans require an evaluation and control mechanism. It is recommended that the Upper Eastern Shore develop a series of dashboards to track and measure broadband deployment success during and after implementation.

Introduction

The Business, Economic and Community Outreach Network (BEACON) of the Franklin P. Perdue School of Business at Salisbury University is commissioned by the Mid-Shore Regional Council to develop a Broadband Deployment plan. The project was awarded using American Recovery and Reinvestment Act (ARRA) funding through a State Broadband Initiative (SBI) grant obtained by Maryland Broadband Cooperative (MdBC). The SBI is a program administrated by the National Telecommunications and Information Administration (NTIA), part of the U.S. Department of Commerce, for the purpose of increasing availability and quality of Broadband data and planning throughout the country¹.

This planning activity is timely in that it is being implemented concurrently with a \$158M Broadband Technology Opportunity Program (BTOP) grant awarded through the ARRA to the State of Maryland's Department of Information Technology (DoIT). DoIT, as part of a public-private consortium, plans to deploy the One Maryland Broadband Network (OMBN) with the primary purpose of connecting 1,006 Community Anchor Institutions (CAI) per region throughout the state, and seeks to promote affordable and abundant broadband in each of Maryland's 24 jurisdictions. The OMBN was established to serve broadband needs of the entire state. The project will link together and extend three independent networks: the state-run network Maryland; the Inter-County Broadband Network (ICBN), a 10-county consortium in Central Maryland led by Howard County; and the Maryland Broadband Cooperative (MdBC), a rural, non-profit middle mile provider. The nearly 650 miles of new fiber in the rural portions of the state would substantially improve public

¹ Environmental Assessment on behalf of One Maryland Broadband Network. (2011). Kensington, MD: Columbia Telecommunications Corporation.

safety, government services, healthcare delivery, and education offering Community Anchor Institutions access speeds between 10 Mbps and 10 Gbps²

The National Broadband Plan describes the importance of universal broadband as follows:

“Like electricity a century ago, broadband is a foundation for economic growth, job creation, global competitiveness and a better way of life. It is enabling entire new industries and unlocking vast new possibilities for existing ones. It is changing how we educate children, deliver health care, manage energy, ensure public safety, engage government, and access, organize and disseminate knowledge”.³

The deployment of publicly available fiber optic infrastructure in the Upper Eastern Shore will ultimately bring economic and social benefits and reduce the digital divide, allowing for high economic success in the region. Through the connection of Community Anchor Institutions many public facilities will benefit from increased broadband speeds and availability. Education and healthcare will likely see the greatest influx in technological capabilities through the use of e-learning and tele-care. The extraordinary resources available via the internet potentially allow for greater patient care and attention, as well as greater learning experiences for all Marylanders.

The overall findings from the BEACON study determined that universal broadband access brings benefits into all aspects of life including health care, education, public safety, state and local governments, and businesses. However, issues such as infrastructure, geography, future technologies, and service provider relationships would need to be considered for the successful broadband

² Maryland Department of Information Technology | BroadbandUSA - NTIA. (n.d.). Home | BroadbandUSA - NTIA. Retrieved February 23, 2012, from <http://www2.ntia.doc.gov/grantee/maryland-department-of-information-technology>

³ National Broadband Plan - Executive Summary. (n.d.). *The National Broadband Plan: Connecting America*. Retrieved February 23, 2012, from <http://www.broadband.gov/plan/executive-summary/?search=executive%2bsummary>

implementation. Efforts to successfully implement fiber optic broadband will definitely be rewarded by the narrowing of the technological gap between rural regions and metropolitan areas, allowing developing areas to compete for economic excellence on a level playing field.

Additionally, an Environmental Assessment conducted on behalf of OMBN concluded that fiber construction will not be hazardous to the construction sites' soil content nor will it cause harm to the water resources near the construction area. From an environmental perspective, fiber optic construction in Upper Eastern Shore will provide benefits far greater than the temporary environmental disruption.

To mitigate implementation risks associated with broadband deployment via fiber optics, all the Tri-county Councils of the Upper Eastern Shore should consider the recommendations mentioned in the broadband deployment plan. As a result of the BEACON study, last mile issues were identified as the probable threat to universal broadband access for rural Maryland. Last mile issues could stand as an obstacle to implementation because service providers lack confidence in term of cost benefit for providing access to rural areas. Altering that perception will be most challenging to deployment. Promoting mutually beneficial relationships with service providers and rural area residents will encourage joint collaboration in bringing broadband to rural areas of the Upper Eastern Shore.

Despite the potential obstacles, broadband is the key to the technological future and development of the Upper Eastern Shore and will transform economic conditions in rural Maryland into centers for achievement and innovation. The broadband deployment plan for the Upper Eastern Shore could be a very useful tool in providing guidance for connecting rural regions to universal broadband access.

Section I – Broadband in Rural Maryland

History of Efforts towards Universal Access

In 2004, the Tri-County Council for the Lower Eastern Shore of Maryland (encompassing Wicomico, Worcester and Somerset Counties), the Mid-Shore Regional Council (encompassing Caroline, Dorchester and Talbot Counties), and Cecil, Kent, and Queen Anne’s Counties, along with support from the Maryland Technology Development Corporation (TEDCO), and the Maryland Department of Business and Economic Development (DBED) came together to lead a project that published the 2004 Eastern Shore Broadband Study entitled “The Maryland Eastern Shore Broadband Network Strategic Plan.” The project aimed to find solutions for the lack of Internet access in the region, which in turn would increase the Eastern Shore’s communication infrastructure capacity and competitiveness. To emphasize the effects of the Eastern Shore achieving universal broadband access, the goals from the 2004 report have been highlighted below.

The project produced seven goals and a wealth of policy recommendations for the region. The policy recommendations in the report were meant to serve as action items for local businesses, local government, and state government in order to help expand infrastructure and services. The seven goals were meant to supplement the policy items to further guide the process of making increased broadband a reality. These goals as per the Eastern Shore Broadband Study are given below.

- Make Moderate application Internet access available to all businesses in rural Maryland immediately (200 Kb/sec in one direction)
- Provide competitive options for Moderate Internet access, including last-mile options within 1 year, for almost all businesses. Increase speed of moderate access to exceed 200 Kbps in both directions (200 Kb/sec to 1 Mb/sec services in both directions) for at least one

competitive option. Make multiple competitive options at higher speeds available within 1 year for 50% of businesses

- Provide cost-effective Intensive (high-speed) Internet access services to 70% of businesses within 1 year (1 Mb/sec to 100 Mb/sec in both directions)
- Increase availability of diverse carriers and routes for intensive internet access to businesses and ISPs within 2 years, as businesses increasingly require fully-available, mission critical services and carriers need diverse access to ensure network availability.
- Incorporate survivable broadband use as a cornerstone of interoperable emergency services communication within one year
- Create economic development incentives at the local and state level for firms creating infrastructure and services with beneficial economic impact within 18 months
- Provide financial tools to foster public and private sector infrastructure and service initiatives such as a broadband infrastructure bonding authority within 18 months.⁴

Senate Bill 753 (2006): Rural Broadband Communication Services

“The State Highway Administration shall allow the use of any right-of-way for the installation of broadband communication infrastructure provided by nonprofit telecommunications services providers in rural areas and underserved areas of the state without imposition of any change for the use of the right-of-way”⁵.

⁴ TLA Associates (2004). *The Maryland Eastern Shore Broadband Network Strategic Plan Final Report*.

⁵ Maryland General Assembly (n.d.). Unofficial Copy of Senate Bill 753. *Department of Legislative Services*. Retrieved July 9, 2012, from <http://mlis.state.md.us/2006rs/bills/sb/sb0753e.pdf>

The statute determined that essentially any nonprofit telecommunication firm could use broadband infrastructure regardless of who owned it. This is directly applicable to fiber installation and backbone utilization. This legislation in turn gave way to the establishment of Maryland Broadband Cooperative by support from the Tri-county councils in Maryland thus establishing the premise for a universal broadband deployment plan. The Rural Maryland Broadband Coordination Board, a nine member interagency board was also established by the senate bill 753 that is responsible for coordinating efforts to deploy broadband infrastructure in rural and underserved areas and for reviewing and approving all disbursements from the Broadband Assistance Fund, which is administered by the Department of Business and Economic Development (DBED).

Regional Plan Mission:

Mission: To provide residential, business and public anchor institutions with the opportunity to be served by the evolving and most current information technologies available today.

Vision: Everyone on the Upper Eastern Shore has equal access to affordable and current information technologies.

Section II- Strategies and Objectives

Short Term v. Long term

The short term strategies and objectives of the broadband deployment plan are as follows:

- To determine the current status of rural broadband expansion project
- To link 1,006 government facilities and community “anchor institutions” in each region throughout the state

- To fulfill the goals for Broadband Technologies Opportunities Program (BTOP) applicable as per National Technology and Information Administration:
 - To support the deployment of broadband infrastructure, enhance and expand public computer centers and encourage sustainable adoption of broadband service
 - To deploy new or improved broadband Internet facilities (e.g., laying new fiber-optic cables or upgrading wireless towers)
- To identify the continuing barriers to investment in broadband deployment plan and adoption of the broadband itself
- To document the opportunity cost caused by a lack of adoption of broadband to date

The typical timeframe for achieving short term goals ranges from 2-3 years.

The long term goals of this project are given below:

- To develop five, and ten year demand forecasts for broadband
- To create a set of action items to improve the adoption of broadband service statewide
- To collaborate with broadband service providers and information technology companies to encourage deployment and use
- To facilitate information exchange regarding use and demand for broadband services between public and private sector users

The typical timeframe for achieving long term goals could possibly range anywhere from five to ten or ten plus years.

Infrastructure Issues

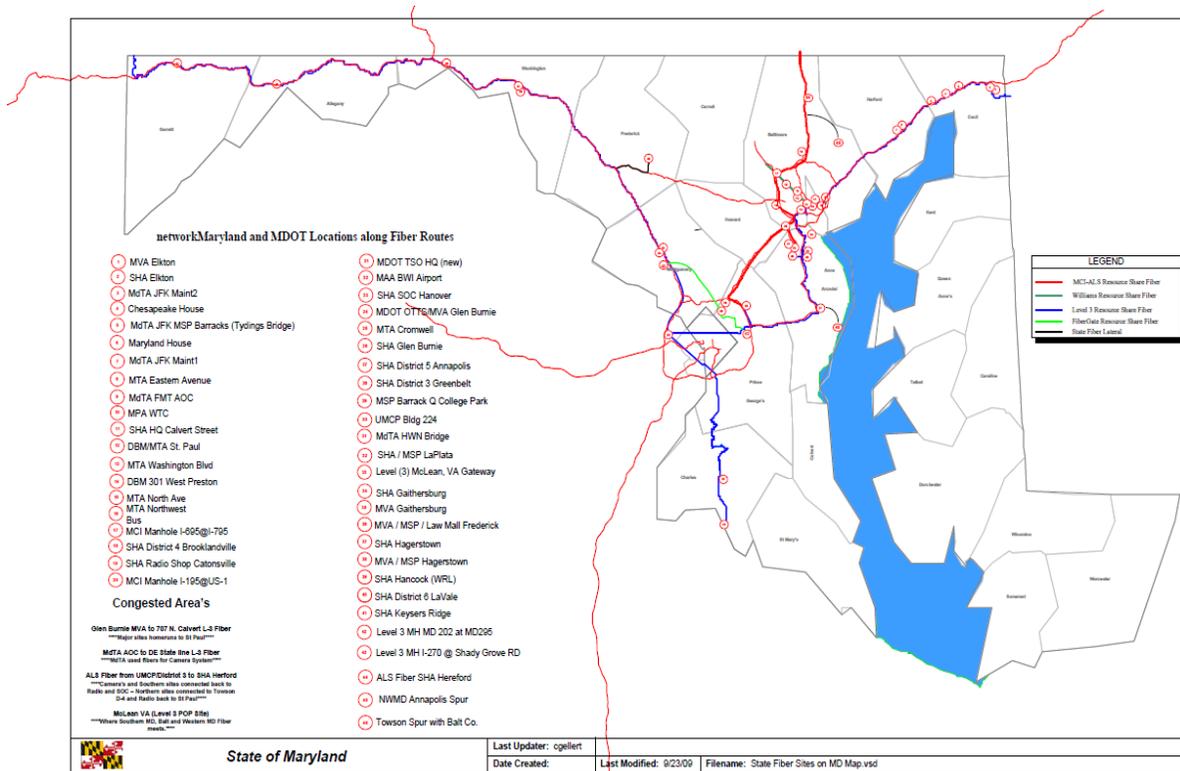
Many of Maryland's rural communities have traditionally been served by telecommunications carriers through low-speed dial-up or limited-range DSL. Inadequate infrastructure has been a significant barrier to diversification of the rural economy and an obstacle to the development and recruitment of new industries. The necessary components of infrastructure that could support broadband consist of a

fiber optic backbone for broadband deployment. The following describes vital assets, including the networks that need to be considered when looking into the infrastructure of the Upper Eastern Shore.

Fiber Optic

The criterion laid out in the environmental assessment project for One Maryland Broadband Network (OMBN), the middle mile infrastructure project, suggests that the traditional commercial services would not be able to fulfill the needs of the public sector CAIs (Community Anchor Institutions). Therefore, only a community-owned fiber optic based solution would satisfy the demand for low ongoing operational costs, scalable broadband services, and community access. DoIT advises that Maryland currently has a fiber optic backbone totaling 2,456 miles. This includes the State-owned network Maryland network and the Maryland Broadband Cooperative (MdBC) network which will be introduced furthermore later. The following figure shows network Maryland and MDOT locations along fiber routes.

Figure 2: network Maryland Fiber Route Map



The current anchor institutions on the Upper Eastern Shore will need to be connected using a fiber backbone that should have the ability to support last mile connectivity for the residences and businesses from other private investments. Currently there are total of 1180 anchor institutions in the region broken down as follows. (For detailed information regarding the location of these anchor institution, please refer to Appendix A, Table 27 through 53 for all Upper Eastern Shore Counties).

Table1: Number of Anchor Institutions in Upper Eastern Shore Counties

Upper Eastern Shore	Number of Anchor Institutions
K-12 Schools	91
Libraries	9
Medical/Healthcare	898
Public Safety	56
Higher Education	9
Community Support AI	105
Total	1180

These anchor institutions represent a wide range of community organizations such as, libraries, hospitals, senior centers, and public safety and educational facilities. The fiber optics to connect these anchor institutions would need to be installed aerially on existing utility poles or placed underground in 2" conduits. Also, these fiber resources are to be shared on an open-access basis with commercial operators (as required by BTOP).

Wireless Antennas

The infrastructure required for a wireless system is communication towers,

equipment shelters and microwave and/or fiber connectivity between sites. This would be an alternative to replace fiber optic cable hung on existing pole lines with radio towers and microwave radios. It would require construction of radio towers, each reaching a height of 40 to 400 feet above ground level. Multiple large antennas would have to be installed on the towers (six-foot dish antennas in some cases), and huts with radio gear and diesel generators would have to be installed at the base of each tower. Most companies that erected wireless towers make extra revenue by leasing tower space out to other wireless providers. It is not mandatory that tower owners share space, but it is beneficial that extra space is leased to others. In fact, the majority of towers in the U.S. are owned by investment firms that own towers, but do not offer wireless service.

One Maryland Broadband Network

The Department of Information and Technology (DoIT), as a part of public-private consortium deployed One Maryland Broadband Network (OMBN) with \$115,240,581 in grant funding awarded in September 2010 for the purpose of connecting 1,006 Community Anchor Institutions (CAI) throughout the region, and seeks to promote affordable and abundant broadband in each of Maryland's 24 jurisdictions. The expectation is to build 1,294 miles of new high speed internet fiber optics which will directly connect and serve 1,006 community anchors and other points of interest including 458 schools (K-12), 262 public safety facilities, 189 government facilities, 44 libraries, 21 community colleges and other anchor and community support organizations. It includes three primary partners: network Maryland (operated by Department of Information Technology), Inter-county Broadband Network (ICBN), and the Maryland Broadband Cooperative (Mdbc). These three partners are existing independent network interconnected and extended through the OMBN project.⁶

⁶ DoIT (n.d.). One Maryland Broadband Network. *Department of Information Technology*. Retrieved July 16, 2012, from <http://doit.maryland.gov/ombn/Pages/ombnHome.aspx>

Inter-County Broadband Network (ICBN)

It is a collaborative inter-governmental consortium that consists of ten central Maryland counties and cities which are Annapolis, Anne Arundel County, Baltimore City, Baltimore County, Carroll County, Harford County, Montgomery County and Prince George's County. "ICBN will directly connect 715 anchor institutions in Central Maryland, including hundreds of K-12 public schools, libraries, public safety agencies, community colleges and other government institutions. In addition, in each of these communities – the network will also connect to existing networks with thousands more anchor institutions. Also, the ICBN will make available nearly 800 miles of fiber optic cable for low-cost lease by commercial entities to expand the reach and quality of broadband access throughout the region". The construction of fiber optic lines outside ICBN will be managed by DoIT. ⁷

networkMaryland

"networkMaryland is the State's private high-speed network that supports public sector data transport and common service delivery. It is built using a combination of existing fiber optic cable assets and the installation of additional fiber and wireless infrastructure. The network was created from an initiative to utilize resource shared fiber optic cable assets throughout the state to provide affordable, high-speed broadband to all areas of the State and to provide cost savings to the State of Maryland. It provides a cost effective solution for wide area connectivity, Internet connectivity, the Statewide Government Intranet that allows agencies to host and share common applications, and Intra-LATA transport services allowing the

⁷ Department of Information Technology (n.d.). One Maryland Broadband Network. *Maryland General Assembly*. Retrieved July 16, 2012, from http://mlis.state.md.us/2012rs/budget_docs/all/Capital/FB04B_-_One_Maryland_Broadband_Network.pdf

customers to forego the long distance costs associated with a public network”.⁸

networkMaryland's Internet Service is analogous to the routed services provided by a traditional Internet Service Provider (ISP). networkMaryland provides the routed infrastructure over which its Internet Service customers will communicate to the World Wide Web community. Currently, the project team of networkMaryland has completed the installation of an OC-48 SONET ring between the core PoPs (Points of Presence) of College Park and Baltimore and Annapolis. The fiber ring is designed with both hardware redundancy and fiber diversity to increase the overall reliability of the network. The network will continue to expand in the future, as customer demand increases. The future for fulfilling customer needs is positive with many ongoing discussions to connect the state data centers together for back up, the creation of an educational PoP in Baltimore and the carrying of other agency traffic. Each of these projects requires high speed bandwidth and reliable connectivity that networkMaryland can deliver in the future. A DWDM ring has been created through a partnership with USM and MDOT. It provides an additional fiber route for diversity.

networkMaryland is a resource for government agencies throughout the state. However, networkMaryland does not allow commercial uses of the network and it cannot be used to supply bandwidth to businesses.

Maryland Broadband Cooperative(MdBC)

It is a member-owned and operated universal access, fiber optic network designed to deliver an advanced, world-class broadband network across the rural

⁸ NetworkMaryland™ FAQ; Maryland / Department of Information Technologies; DoIT Home; <http://doit.maryland.gov/support/Pages/nwmdFAQ.aspx>

communities of the Upper Eastern Shore, Lower Eastern Shore, Southern and Western Maryland fostering economic development and supported by its' members who will provide Last Mile services. The MdBC is positioned to work with local communities and their regional councils, DBED and members to develop the full economic potential of this world class high-technology network. In fact, the Mid-Shore Regional Council and Upper Shore Regional Council have partnered with MdBC to support broadband deployment throughout the Upper Eastern Shore. The role of MdBC is to provide the advanced telecommunications network infrastructure via private/public partnership; construct manage and operate the network, which will include experienced telecommunications network providers through strategic alliances; provide a network architecture including a route that traverses the Eastern Shore, Southern and Western areas of Maryland. Similarly, it provides connectivity to industrial parks; bring economic development and quality-of-life benefits to the region, including leveraged funds from the DBED, EDA, Department of Agriculture, and other State & Federal sources; and finally will create substantial economic development/competitive advantages for each region. This infrastructure will also alleviate the need for the State to build an overlapping fiber optic backbone network on the Upper Eastern Shore. On October 20, 2011, MdBC selected Infinera, an industry leading optical equipment manufacturer based in California for the statewide ROADM-based optical network because of its simplicity, scalability and efficiency in building regional and metro networks.⁹

As an open-access transport company, MdBC does not provide retail services to the public but provides the transport components to connect its members with Tier 1 Internet providers. The members of MdBC may acquire competitively priced lit services from MdBC at speeds ranging from 10 Mbps to 100 Gbps. Under unique circumstances, members may acquire dark fiber optic strands on a long term lease.

⁹ About MdBC | Maryland Broadband Cooperative. (n.d.). *Maryland Broadband*

Cooperative. Retrieved February 23, 2012, from <http://www.mdbc.us/about/>

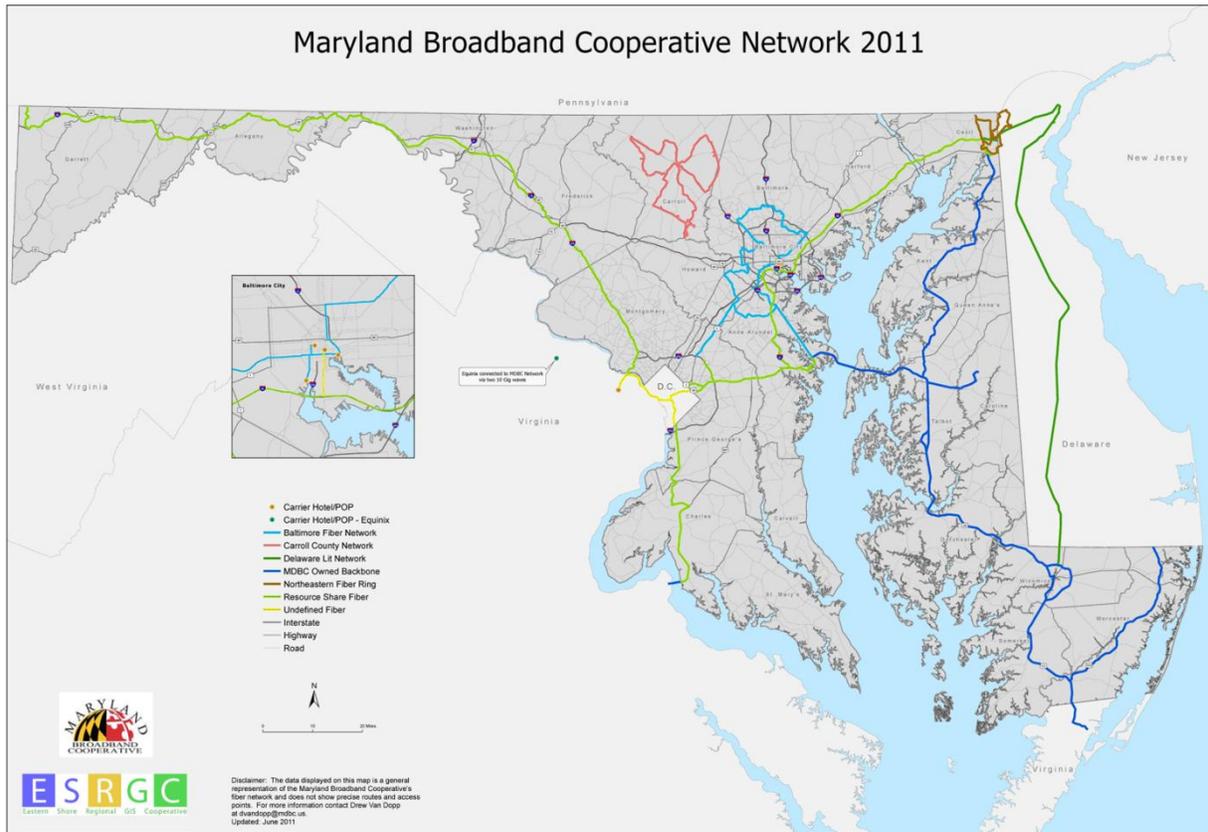
Mdbc can solve deployment challenges by offering members access to an Mdbc node facility for locating their equipment or a secure communications cabinet for backup data storage and retrieval. Mdbc can leverage its existing right-of-way agreements to build new cost-effective open-access fiber spurs into end-customer premises. Through the Mdbc network, members will be capable of providing the performance and flexibility necessary to broaden the global market for rural Maryland.

As a middle mile fiber provider, Mdbc provides good layout of world-class infrastructure for enabling the providers to offer the services to the end users of broadband. It has access to both existing fibers and the ones that are to be built. “The Resources Share Agreement (RSA) between the state of Maryland and Mdbc provides important fiber assets that will extend the reach of its members from the Delaware border to Southern Maryland to Keyzers Ridge. It will also add Mdbc’s valuable network diversity with fiber hotel connections in Baltimore, McLean and Ashburn, Virginia.”¹⁰ As part of the OMBN project, Mdbc is receiving grant funds to acquire telecommunication shelters (Points-of-Presence) and industry leading optical equipment to optimize the service value of existing and to be built fiber network.

In the end, to the extent that any of these existing networks today, or such networks constructed in the future might provide links that would be useful to a greater Upper Eastern Shore Region network, then all networks discussed above would be considered as part of the long term solution. Both legal and other restrictions can eventually be overcome as long as the issues have been identified and contingency plans have been developed. The following figure 3 shows various network and coverage throughout Maryland from Mdbc.

¹⁰ Maryland Broadband and state government begin sharing fiber resources to benefit all of Rural Maryland. (2011). *Maryland Broadband Cooperative*; <http://www.mdbc.us/news/marylanbroadband-and-state-government-begin-sharing-fiber-resources-to-benefit-all-of-rural-maryland/>

Figure 3: Maryland Broadband Network Cooperative 2011



The counties under the Upper Eastern Shore will have both underground and aerial fiber optic installation. In the case of insufficient utility poles for installing the fiber optic aurally, restrictions can be placed. Moreover, regulations typically require pole owners to lease space for installation of additional cable. Other issues with utility poles could be heavy storms and wind that may affect reliability of the network and are aesthetically less pleasing. (As previously mentioned, for detailed information regarding the location of these anchor institutions, please refer to Appendix A: Table 27 through 53). Along with these, new building construction on the Upper Eastern Shore will require additional infrastructure that again could make the project cost prohibitive and provide only a small fraction of the capacity produced by dedicated fiber optics for anchors and commercial operators. As per 2010 data, the total number of new authorized residential buildings on the Upper Eastern Shore is 748.

One of the other infrastructure issues could be a finite amount of spectrum but a growing demand for it. “Spectrum is the range of electromagnetic radio frequencies used to transmit sound, data, and video across the country. It is what carries voice between cell phones, television shows from broadcasters to your TV, and online information from one computer to the next, wirelessly.”¹¹ The challenge is the providers who hold the spectrum license are limited to serving selective markets only and not necessarily the rural part of the Upper Eastern Shore. (For more information on the providers with spectrum license in the region and the market it serves, please refer to Appendix A: Table 56 through Table 60).

The recent agreement of US government to auction the wireless spectrum for better mobile service and to open up new frequencies for next-generation Wi-Fi networks provides hope for limited spectrum availability on the Upper Eastern Shore. As the time magazine mentions, “mobile companies like AT&T and Verizon Wireless can buy chunks of wireless spectrum and then deploy it for next generation 4G networks to address the bandwidth crunch fueled by exploding wireless-data usage.” Access to such additional unlicensed spectrum implies faster, more reliable service for streaming movies, videos, games and other services requiring heavy bandwidth, also the mobile devices such as smart phones can connect to long-range super Wi-Fi networks.¹²

Access Issues

The issue of providing access to broadband for rural areas on the Upper Eastern Shore is categorized into two sub issues. They are geography and user category issues that are explained below.

¹¹ About - Reboot.FCC.gov ; Spectrum Dashboard ; Reboot.FCC.gov;
<http://reboot.fcc.gov/reform/systems/spectrum-dashboard/about>

¹² Wireless Windfall. (2012, March 5). *Time*, na, 11

Geography/ Coverage Issues

The Eastern Shore of Maryland is divided into three sections: the Upper Eastern Shore, which includes Cecil, Kent, Queen Anne's, Caroline and Talbot counties, and the Lower Eastern Shore, which includes Wicomico, Worcester, Somerset, and Dorchester counties. The Eastern Shore has a land area of 3,326.21 square miles. The total area is broken up almost evenly between the three regions. The Eastern Shore forms part of the Delmarva Peninsula and is surrounded on three sides by the Chesapeake Bay and Atlantic Ocean. The three regions are on the Atlantic Coastal Plain with the exception of half of Cecil County which lies in the Piedmont region of Maryland.¹³

The Upper Eastern Shore consists of 1,298 square miles of land which is predominantly covered in agriculture (58%), forested and wetlands (29%), and urban land (11%).¹⁴ It is divided by several rivers, including the Susquehanna, Sassafras, Chester, and Wye.¹⁵ As mentioned above, the counties of the Upper Eastern Shore include Cecil, Kent, Queen Anne's, Caroline and Talbot. The summer average temperature for Cecil is 74.1 F with humidity at 73.15% and its winter average temperature is 34 F. The average wind speed is about 10 mph in Cecil. Similarly, Kent's summer average temperature is 75 F with 71.25% humidity and about 36 F winter average temperature. Its average wind speed is approximately 12.52 mph.

¹³ University of Maryland Eastern Shore Rural Development Center (n.d.). Map of Maryland's Lower Eastern Shore Counties. *Skipjack*. Retrieved July 16, 2012, from http://skipjack.net/le_shore/maps/shoremap.html

¹⁴ Maryland Department of Natural Resources (n.d.). Maryland Tributary Strategy Upper Eastern Shore Basin Summary Report for 1985-2005 Data. *dnr.maryland.gov*. Retrieved July 16, 2012, from <http://dnr.maryland.gov/bay/pdfs/uesbasinsum8505final07.pdf>

¹⁵ The Eastern Shore Guide (n.d.). Eastern Shore Map Eastern Shore of Maryland and Virginia's Eastern Shore. *Eastern Shore*. Retrieved July 16, 2012, from <http://www.easternshore.com/esguide/eastern-shore-map.html>

Lastly, Queen Anne’s summer average temperature is 74.2 F with 72.95% humidity and winter average temperature is about 35.8 F. The average wind speed in Queen Anne’s however, is 13.73 mph. Similarly, Talbot County’s summer average temperature is 74.8 F with average humidity at 73.47% and winter average temperature at about 35.8 F. Its average wind speed is 15.79 mph. Lastly, Caroline County’s summer average temperature is 75F with average humidity at 73.09% and winter average temperature approximates to 36 F. The average wind speed in Caroline is about 15.51 mph.

Considering the geography of the region, there could be minor geographical issues in fiber construction, such as in wetland areas. The largest concentration of wetlands (42 percent) is in Dorchester and Somerset Counties on Lower Shore region. However, they are also widespread throughout Caroline, and Queen Anne’s, counties. Limited new fiber will be constructed in these areas. Similarly, the average wind speed in these regions also needs to be taken into consideration as the Upper Eastern Shore has aerial fiber construction planned. Lastly, the water, bridge and railroad crossings could be potential geographical issues as well for reaching all rural areas on the Upper Eastern Shore. The following table shows the existing numbers of water, bridge and railroad crossings in each county throughout the Upper Eastern Shore Region.

Table 2: Number of Crossings in Eastern Shore Region

Counties	Railroad	Water	Bridge
Cecil	5	3	13
Queen Anne’s	1	0	4
Kent	3	0	1
Talbot	0	0	0
Caroline		9	3

Source: Environmental Assessment: One Maryland Broadband Network

User Category Issues

The broadband users/consumers, including both household and businesses would like to evaluate service offerings to see if they are likely to meet their needs. These services, which consumers want, would need to be accepted as profitable, then developed, invested in and deployed by the providers. There could be issues with identifying the kinds of applications that users are likely to find useful and desirable, and determining the benefits that different segments of the public anticipate from access to broadband services. With various applications that users work with, there would be a problem with providing high levels of bandwidth. For example, high capacity is a requirement as more users upload their content to the cloud to share and sync it across multiple devices. Besides reliability issues for applications, affordability could be another challenge as access requires owning a computer, device and having a connection which makes the ownership a bit costly.¹⁶

Speed Issues

As per the national broadband goal, “Every community should have affordable access to at least 1 gigabit per second broadband service to anchor institutions such as schools, hospitals, and government buildings.” However, in terms of the Upper Eastern Shore, it is not quite feasible yet due to various issues discussed in this report. The counties’ schools are currently at capacity for Internet bandwidth, and many are not interconnected except by high-cost, low-speed connections, not suitable to support the demand for network-based educational tools; its libraries do not have sufficient bandwidth to meet the public need for Internet access; its public safety entities, including fire houses and police stations, may not adequately meet their communication needs. Though one gbps could be an ultimate goal, getting to 15 Mbps or above for heavy users would be an initiating point since the area does not

¹⁶ Eisenberg, Jon; *Results from CSTB studies apropos broadband benchmarks*; The National Academies; http://www.broadband.gov/docs/ws_benchmarks/eisenberg.pdf

have access to the required speed. In fact, considering the advancement in technology 10 gbps is going to be the next big thing, but it is not possible yet in rural areas of the Upper Eastern Shore. The following table shows the average download and uploads speeds for the counties in the region. Average download speed is the time it takes for a user to load a webpage or stream a video. Average upload speed is the time it takes for a user to put any information, document or video up on the internet.

Table 3: Average Download and Upload Speed in Upper Eastern Shore Counties

Upper Shore Counties	Average Download (kbps)	Average Upload(kbps)
Cecil	7875	1954
Queen Anne’s	5317	1214
Kent	3681	611
Caroline	10,017	2188
Talbot	4160	543

Source: mdbroadbandmap.org

“What is Broadband?”

In general, broadband refers to high-speed Internet access, which is always on and faster than the traditional dial-up access. Broadband uses low-frequency electric signals to carry ordinary phone calls and higher-frequency signals to carry Internet data. It provides higher-speed data transmission and allows more content to be carried through the transmission “pipeline.” The highest quality Internet services such as streaming media, VoIP (Internet phone), gaming, and interactive services is feasible via broadband. It is increasingly necessary to access full range of services and opportunities that the Internet can offer.¹⁷ The definition of broadband could include identifying kinds of applications that users are likely to find useful and desirable and determining the benefits that different segments of the public anticipate from access to broadband services. Something to keep in mind is that too limited a definition

¹⁷ About | Broadband USA – NTIA; Broadband USA; <http://www2.ntia.doc.gov/about>

could result in a mismatch between expectations and capabilities while an unrealistic definition could prompt inappropriate or poorly aimed policy intervention.

Cost and Competition

The entities listed below are key components to ensuring the success of broadband implementation and each must be carefully considered when deploying the plan. Understanding cost and competition issues could support in potential strategies for overcoming push-back from each entity listed below.

Rural Area Premium

The rural area premium alludes to the additional costs for users of broadband in rural areas. Often rural area residents and business owners have to bear the cost for a service provider to come to their area where service is limited and essentially build additions to network to connect that particular user. Increasing the fiber backbone would leverage the anchor institutions and/or connectivity which could reduce the extra charge for rural users in terms of construction/installation in order to acquire broadband. Due to low population density in rural areas service providers have to charge the rural users for installation because there is no perceived cost benefit to servicing such regions.

As high quality broadband is being made available to the public via Community Anchor Institutions, they will become more familiar with the services. As users' awareness of broadband capabilities increases, there could be a greater aggregate demand for service since the value placed on adequate broadband once they incorporate it into their daily lives rises as well. Initially, residents may not perceive or understand the benefits of having adequate broadband so user education may be a separate community initiative in itself. The FCC has already begun programs to increase computer literacy and communicate the benefits of universal access.

Providers

While service provider involvement is the last step in the last mile issues to be solved, the presence of provider issues in the future is current and pertinent to evaluating the goals and objectives of successful broadband implementation. While many of the listed providers have the capacity to provide adequate access, few of them reach their capacity in rural areas, if they provide any access at all. Competition between service providers will be a key component that represents the risk to achieve the goals and objectives of the National Broadband Plan. A risk mitigation plan is recommended to manage the relationships of major service providers in the area once more customers become available due to broadband expansion. Competition among service providers is needed to keep prices reasonable for users. Once broadband access becomes widely available new service providers may emerge to service smaller regions. This could be a step forward to keep prices competitive for rural users while also stimulating business growth in the entire Upper Eastern Shore Region.

One of the main issues facing provider competition risk is if one of the providers tries to establish a monopoly in the rural areas, thus subjecting rural consumers to non-competitive prices. One way to mitigate the potential for monopoly is to encourage fiber sharing among providers. Fiber sharing will allow multiple providers to gain revenues from rural consumers, while keeping prices competitive and affordable for rural users. Ultimately, service providers will be the facilitators of access for rural users, and relationships with each other as well as emerging providers after implementation must be considered throughout the entire process. MdBC's membership which includes public sector entities, counties, government institutions and non-profit organizations and roughly 35 Internet Service providers ranging from small businesses to large firms will have equal access to all MdBC's cooperative assets in the Upper Eastern Shore Region and across the states.

In conjunction with emerging service providers as well as positive relationships among existing providers, the costs of broadband access should prove competitive with other metropolitan areas in the region such as Baltimore and D.C.

User Coalitions

The existing social coalitions may want to employ training initiatives for their members as adequate broadband becomes available in their areas. Encouraging the emergence of other user coalitions will ultimately increase margins for the cost-benefit analysis. Once user coalitions develop training, awareness will increase, thus increased demand for broadband will prove beneficial for providers. The coordination of user coalitions will help communicate to service providers the demand for their services once fiber is installed. MdBC can act as a demand aggregator for the private sector. End users can inform MdBC of their current and future service needs, which MdBC can then publish to its membership base. MdBC members that are providers, can then compete with one another to provide the demanded services to the private sector.

Public and private user coalitions will also be stakeholders in implementation because they could be leaders in community awareness and outreach. Coalitions like SBA, SCORE, local committees and organizations that are tasked with the challenge of interpreting how broadband will impact their organization. Some examples would be if a small business attends a seminar with the SBA to train their employees on the power and advantages of increased broadband access.¹⁸

Partnerships

Partnerships between service providers would prove beneficial in the management and cost distribution of maintenance over time. For partnerships to be a

¹⁸ Chapter 13: Economic Opportunity; National Broadband Plan; Broadband USA;
<http://www.broadband.gov/plan/13-economic-opportunity/?search=user%2bcoalitions#r13-3>

viable option, service providers would have to work together in maintaining fiber lines thus sharing business. Each county would have to communicate with their service providers to determine a maintenance schedule including financial estimates based on useful life of equipment.

A different type of partnership that could be beneficial to the Upper Eastern Shore is a public-private partnership to assist and train local users and businesses. Training classes and workshops are being spearheaded by the digital literacy initiative created by the FCC.

Partnerships between anchor institutions could also provide greater proficiency in broadband usage as well as reducing staff training costs for anchor institution employees. Particularly, during the implementation phase anchor institutions could assist each other in developing best practices for each county to increase connections after the first few are established.

Cooperative

The Maryland Broadband Cooperative (MdBC) is a non-profit organization created by the Tri-County Councils of Maryland and others to promote broadband coverage to rural users. Broadly stated, MdBC's goal is to establish comprehensive access to world-class broadband services in every rural Maryland jurisdiction, so that its members, who provide commercial and residential services, may offer the public the retail broadband products they need to promote economic development, enjoy the benefits of advancing technologies, and add to the quality of life for all Marylanders.

MdBC is strongly committed to expanding broadband coverage in all counties of the Upper Eastern Shore Region. In fact, MdBC will have 3 points of presence on the Upper Eastern Shore in Elkton, Chestertown and Wye Mills. Using MdBC's points of presence, the members can reach out to provide competitive broadband products to the community.

Technology Issues:

The utilization of Anchor Institutions is critical to the deployment of technology to rural areas. Community Anchor Institutions are the locations identified by networkmaryland to serve as hubs in the middle mile of broadband access. The Anchor Institutions serve as the catalyst to widespread adequate broadband access because they are centers for technology innovation in rural areas that are unserved or underserved. There will be additional costs that are associated with the Anchor Institutions as there will be follow up maintenance and equipment needs for each institution. As seen in Appendix A: Table 27 through 53, the list of Community Anchor Institution locations are spread throughout each county to create a blanket of broadband access to all areas of the county. Locations surrounding the institutions will be able to connect to their fiber either by splicing or other agreed upon terms with the institution. As locations surrounding Anchor Institutions seek to use their fiber they will be responsible for purchasing the additional equipment to splice the network.

Future Technologies

The focus of this section will be to identify which technologies will determine the role of broadband in the future. Rather than identify where all existing technologies will be in the future we will center the attention toward technologies that will have the most influence moving forward. The rapid growth in technology has already deemed some current mediums obsolete or soon to be obsolete. A brief description will be given for each out dated technology, and a significant focus will be placed on technologies that will drive change for the next 10 to 15 years.

As new technologies continue to enter the market, the demand for a fiber backbone will still be present to support technological advances. Demand for wireless connectivity facilitated by a fiber backbone is driving investment in wireless capabilities by service providers. The ultimate goal for fiber backbone installation is

to bring maximum service to its users. As seen in Appendix A: Table 54, several of the future broadband technologies are described in depth and categorized based on viability and future availability.

First the existing technologies in the current market are described to show superiority of fiber as a backbone infrastructure in the present and future.

DSL

Relative to rural areas, DSL is not as practical or efficient as some other means of internet because the distance limitation of 1000ft is not realistic for users that may own a significant amount of land with none or few other residences within 1000ft. Additionally, any developments in DSL could not out trump the advantages of fiber because DSL proves cost prohibitive when compared to Fiber. One of the goals of the broadband initiative is to increase average broadband speeds in rural areas thus eliminating the use of slow DSL connections.

Wireless

Utilization of wireless technologies such as Wi-Max and Gigabit wireless provide extended bandwidth via an antenna or transmitter to provide broadband access. One of the benefits of wireless broadband is the allowance of hotspots which gives certain areas free WiFi and anyone can connect to the internet. Specific to Upper Eastern Shore wireless is a feasible option to satisfy some of the last mile issues.

“A fiber network is needed behind a Wi-Max system to feed the needed bandwidth to each antenna. A Wi-Max antenna needs as much as two DS3s of base broadband in order to serve customers. This type of bandwidth will only make sense when coupled with a fiber system. If the transmitters and receivers of this technology

were made at a low enough cost, such a wireless technology could replace the drop to the house and act just like having a fiber to your house.”¹⁹

Wireless and cable modem technologies are not to be confused with technologies that actually connect the broadband. They are simply a means to an end and not an end in itself. Cable modems and wireless routers can only be utilized if copper, fiber, or satellite exists to connect to the broadband service. Thus wireless and cable modems hardware and installations can be considered a middle man to provide last mile services- broadband to the end user via a broadband hub.

Satellite

The biggest issue with satellite data is always going to be cost despite its lower service speed comparison to broadband services. Today, an Internet T1 over satellite costs at least \$900 per month and that price is not likely to drop in the near future. Satellite is becoming a viable competitor in rural locations, but it is never likely to compete directly with any urban or suburban network. At this point, there are no major companies out promoting satellite data and in addition, it is very hard for the average customer to implement a satellite solution.

Satellite could not become a major threat to the success of fiber installation until costs for satellite are comparable and competitive with fiber while providing the same reliability of fiber. Moreover, it only makes sense to these customers who absolutely do not have a broadband option and would like connection speed greater than that of dial up.

¹⁹ Stenberg, Peter; Morehart, Mtichell; Vogel, Stephen; Cromartie, John; Breneman, Vince; Brown, Dennis; Broadband Internet’s Value for Rural America; Economic Research Service; United State Department of Agriculture (USDA); August 2009; <http://www.ers.usda.gov/publications/err78/err78.pdf>

Fiber Optics

Fiber to the home (FTTH) is the future of fiber. The greatest benefit of fiber to the home is it is extremely adaptable as technologies evolve. Corning, the originator of fiber optics describes fiber as, “unlike traditional cable or copper wire, optical fiber offered telecommunication service providers nearly limitless bandwidth that could support the world's growing demand for voice, data, and video communications.” Fiber optic offers a robust technology that will evolve with the technological market. Corning also describes the benefits of fiber and its compliments to other technologies.

“Optical fiber serves as the backbone of these networks, with companion technologies such as wireless, coaxial cable, and copper, with hardware and equipment providing the connections that ensure signals are delivered to the world around us.”²⁰

While the companion technologies described above facilitates broadband access, a fiber backbone will be a necessity continuing into the future.

Experts are confident that the future of broadband relies on fiber and have no doubt that fiber will be the global answer to digital divide gaps. Ericsson posted an interview with Chris Holden the President of FTTH council and his assurance in fiber remained unwavering. Ericsson determine,

“Most homes will be connected to the world via fiber-to-the-home (FTTH) within five to ten years, predicts Chris Holden, President of the FTTH Council

²⁰ *Corning Optical Fiber | Fiber Basics Overview*; Corning Incorporated | Home. Web. 16 Feb. 2012.
<http://www.corning.com/opticalfiber/fiberbasics/index.aspx>

Europe. Speaking at this year's Broadband World Forum in Paris, Holden says future bandwidth demands can be met by fiber."²¹

While fiber will eventually be surpassed by wireless there will be a continuing necessity for a fiber backbone thus supporting the construction and usage of fiber routes in the Upper Eastern Shore.

Beyond the means to provide broadband, there are new technologies in the market that can only be utilized if sufficient internet access is available. The following have become a critical means of socioeconomic development.

The Future of Mobile Technology

While internet access to home computers is a luxury that not all rural inhabitants enjoy, the push toward mobile communications is ever increasing and a key element towards the national plan to "Connect America."²²

LTE Mobile Broadband

Long Term Evolution (LTE) is a mobile technology based on the utilization of legacy radio frequency towers. LTE technology is continuing to progress and increase speeds labeled as LTE Advanced which is considered the true 4G standard.

A study by Ericsson Research concluded the following;

²¹ *Everyone Will Have Fiber-to-the-home in 10 Years: Holden.* Ericsson.com. 5 Nov. 2010. Web. 16 Feb. 2012.
http://www.ericsson.com/news/101105_ftth_244218599_c

²² Broadband & Government Performance; National Broadband Plan by Issues: Government Performance; National Broadband Plan: Connecting America; <http://www.broadband.gov/issues/government-performance.html>

“Apart from the requirement on backwards compatibility, LTE-Advanced should fulfill and even surpass all the IMT Advanced requirements in terms of capacity, data rates and Low-cost deployment. This includes the possibility for peak data rates up to 1 Gbit/s in the downlink and 500 Mbit/s in the uplink. However, more important than the peak data rates is the possibility to provide high data rates over a larger portion of the cell.”

The key take away from the excerpt above is LTE’s capability to provide faster service over a larger area. This feature will be suitable to the rural Upper Eastern Shore as it will increase bandwidth in such areas. LTE is not to be confused with 3GPP or 4G as these are both stems branching from the LTE technology. 4G or 4th Generation is the current status of LTE-Advanced technology but the technology itself is not limited to this generation or speed. To clarify, LTE or 3GPP is described in the table below and compared to the capabilities of LTE-Advanced or what is currently called 4G.

Table 4: 3GPP and LTE Advanced Comparison

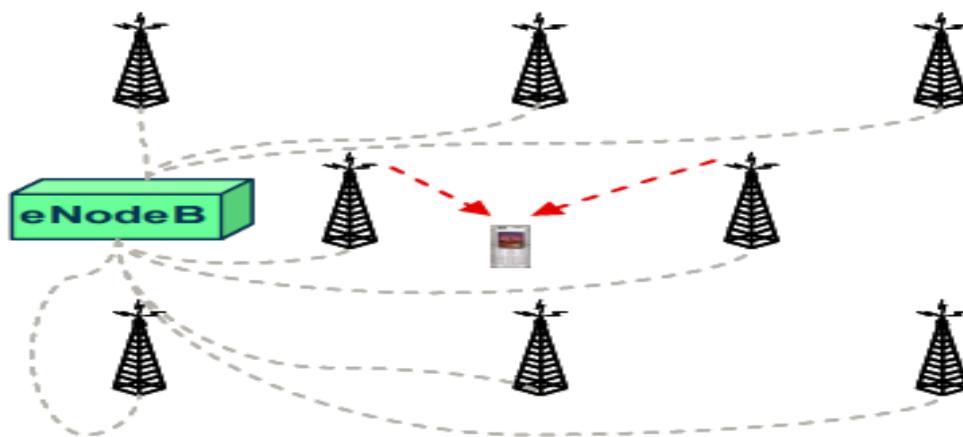
Performance Indicators	REL-8 LTE	LTE-Advanced
Peak data rate	Downlink- 300Mbps Uplink- 75 Mbps	Downlink- 1Gbps Uplink- 500 Mbps
Peak Spectrum Efficiency	Downlink- 15 [bps/Hz] Uplink- 3.75 [bps/Hz]	Downlink- 30 [bps/Hz] Uplink- 15 [bps/Hz]
Control Plane Latency	<100 ms	< 50 ms
User Plane Latency	<5 ms	< Rel-8 LTE
Scalable Bandwidth Support	Up to 20 MHz	Up to 100MHz
Capacity	200 Active users per cell in 5 Mhz	600 Active Users per cell in 5 MHz

Source: Teleca

The table indicates that the emergence of LTE-Advanced will result in 3 times as much capacity in a cell as the former LTE technology and therefore will be able to serve more users in rural locations on the Upper Eastern Shore.²³

One way LTE-Advanced is commercially distributed is via a multi-point transmission that increases speed and probability that a mobile device will acquire a signal.

Figure 4: Coordinated Multi-point transmissions



Speed capabilities of LTE Advanced technology substantially exceed the requirements of both light and heavy users and approach more closely the national goals for broadband access²⁴. The requirements of light and heavy users are discussed further in Section III. Sub-Section B.

²³ LTE-Advanced- The Future of Mobile Broadband. (n.d.). *Teleca.com*. Retrieved March 7, 2012, from www.teleca.com/Renderers/ShowMedia.ashx?id=2a8fb418-6c6d

²⁴ Parkvall, Stefan; Dahlman, Erik; Furuskär, Anders; Jading, Ylva; Olsson, Magnus; Wänstedt, Stefan; Zangi, Kambiz (21–24 September 2008). "LTE Advanced – Evolving LTE towards IMT-Advanced" (PDF). Vehicular Technology Conference Fall 2008. Stockholm: Ericsson Research. Retrieved 15 February 2012. http://www.ericsson.com/res/thecompany/docs/journal_conference_papers/wireless_access/VTC08F_jading.pdf

Table 5: Data Speeds of LTE Advanced

LTE Advanced	
Peak Download	1 Gbit/s
Peak Upload	500 Mbit/s

Source: Ericsson Research

LTE technology serves as both the greatest compliment and competition for fiber broadband. The peak download for LTE advanced is 1 Gbit/s and peak upload is 500 Mbit/s. Currently LTE capabilities in rural areas are growing thus instilling the advantages of broadband and bringing usage to mobile devices. Additionally, LTE 3G and 4G assists in the integration of a fully interconnected environment in rural areas. LTE capabilities also serve as an alternative against effectiveness and reliance on a new broadband infrastructure because with the growing rate of mobile device people are increasingly abandoning their desktops and laptops and increasing usage of mobile phones and tablets to serve their internet needs. It is unlikely mobile phones turn home computers obsolete, but the increasing demand for LTE capabilities and convenience may push for a faster adaptation to technological evolution than originally anticipated. In other words, LTE broadband has the potential to surpass fiber optics because the rate at which LTE has been gaining popularity with its fastest evolution quicker than that of fiber.²⁵

LTE-Advanced is still a new and developing technology, while fiber is widely established and accepted by broadband users and providers. As previously mentioned fiber is also flexible and has the capacity to adapt with changes in market expectations. It is unclear which technology will come out on top in the next 10-15 years but it is evident LTE and fiber optics will be subject to fierce competition.

²⁵ LTE Will Cannibalize Fiber, Promises EMobile | Telecom Asia." *News and Analysis for Asia's Telecom Operators / Telecom Asia*. Web. 15 Feb. 2012. <http://www.telecomasia.net/content/lte-will-cannibalize-fiber-promises-emobile>

Additionally, the National Telecommunications and Information Administration (NTIA) comments,

“The Community Anchor Institutions map is the first map we are deploying for a mobile environment. Tap “Search” to enter an address and find the 25 closest facilities. The map will zoom to the request location, and each point will offer information about the facility and any known broadband service details.”²⁶

By making the broadband availability maps accessible via mobile device, the notion of mobile broadband is applauded. Also, the broadband app continues to encourage the shift in usage of mobile broadband by all users. Another push for mobile apps comes from the FCC in their contest for community app submissions. Not only is mobile broadband usage encouraged by the FCC and NTIA, it is being utilized as a tool for community development.

No matter the medium applied, the general public including users in rural regions will be using mobile broadband if they are not already employing it. Mobile broadband via fiber network is feasible and should be considered in attaining a competitive advantage against LTE and other future mobile technologies.

Cloud Computing

The National Institute of Standards and Technology describes cloud computing as a, “convenient, on-demand network access to a shared pool of configurable computing resources... that can be rapidly provisioned and released with

²⁶ "The National Broadband Map Goes Mobile." *Home Page / NTIA*. Web. 14 Feb. 2012.

<http://www.ntia.doc.gov/blog/2012/national-broadband-map-goes-mobile>

minimal management effort or service provider interaction.”²⁷ In short the cloud enables multiple users to access the same network simultaneously and to receive and view real-time data. One of the most simplistic and user friendly clouds is Google Docs where users can collaboratively create/edit a document at the same time. Cloud computing is a rapidly growing tool for organizations to base their operations out of a web based site. The estimated cost savings for firms who utilize the cloud are almost unfathomable in that significant costs are eliminated just by using the cloud.

Again benefits of cloud utilization will trickle down to yield huge benefits for small to medium size businesses in rural areas as well as the anchor institutions. One example of the benefits seen in firms is the adoption of cloud email addresses in the account explained below.

“The Massachusetts-based company employs more than 9,000 people around the world. In examining ways to improve the efficiency of its technology and processes, Sensata's IT department decided to move its e-mail messaging into the cloud. Using Internet-based e-mail would slash the costs of its on-premise messaging infrastructure while actually improving reliability and scalability.”

Over a four-month period, Sensata Technologies migrated 5,000 mailboxes to the cloud. Employees gained the additional benefit of instantly upgrading to the most current version of the e-mail application, since the software is constantly maintained and updated by the provider in the cloud. The move to an online e-mail platform cut

²⁷ The NIST Definition of Cloud Computing. (n.d.). *NIST National Institute of Standards and Technology*. Retrieved March 7, 2012, from <http://csrc.nist.gov/publications/nistpubs/800-145/SP800-145.pdf>

Sensata's e-mail costs in half, trimming \$500,000 from its IT budget and freeing up IT staff to focus on higher-value tasks.”²⁸

The implications of cloud utilization affect the bottom line of organizations by freeing up resources to focus on other endeavors and continuous improvement. Cloud usage is suitable for most businesses as a means to streamline processes securely and efficiently.²⁹

Below in Table 6 estimated speeds required to run the most common internet activities are listed³⁰. Operating a Cloud application would fall under real-time data collection which could require in excess of 100Mbps. At this point in time all of the Upper Eastern Shore is not prepared to adopt such a data intensive application but with the endless bounds of fiber optics, it is likely the cloud is not far away. Speed requirements for cloud operations greatly depend on the complexity of the cloud in question. For example, speed requirements will be much more forgiving if 5 people are simultaneously working on a document then if a firm of 2,000 people were concurrently reading, composing, and sending e-mails via a much more sophisticated cloud.

Table 6: Estimated Speed for the Common Internet Activities

Download Speed	Application	Minimum Technology	Broadband
768K– 1.5 Mbps	Basic E-Mail, Web Browsing, VIOP- i.e. Vonage	Cable, DSL, BPL, Satellite	

²⁸ Hodges, Craig. "IndustryWeek : Cloud Computing Rains Cost Savings, Productivity Benefits." *IndustryWeek - Connecting Manufacturing's Leaders*. Web. 17 Feb. 2012. http://www.industryweek.com/articles/cloud_computing_rains_cost_savings_productivity_benefits_24337.aspx

²⁹ *Diversity Limited. Clouconomics: The Economics of Cloud Computing*. Wwww.rackspaceclouduniversity.com, 2011. Web. 17 Feb. 2012. http://broadcast.rackspace.com/hosting_knowledge/whitepapers/Clouconomics-The_Economics_of_Cloud_Computing.pdf

³⁰ Salway, David. "How Much Broadband Speed Do You Need?" *About.com Broadband*. 1 Oct. 2011. Web. 20 Feb. 2012. <http://broadband.about.com/b/2011/10/01/broadbandspeedtable.htm>

1.5 Mbps- 3 Mbps	Streaming Music, Standard Definition Video (SD), Remote Surveillance, Telecommuting	Cable, DSL, BPL, Satellite
3 Mbps- 6 Mbps	File Sharing (Small/Med Files), IPTV (Internet Protocol Television)	Cable, DSL, BPL, Satellite
6 Mbps- 10Mbps	Online Gaming, Video on Demand (i.e. Netflix)	Cable & DSL (>6 Mbps Only), Fiber, 4G LTE
10 Mbps- 25 Mbps	Telemedicine, Remote Education, IPTV High Definition (HD)	Fiber, 4G LTE
25 Mbps- 50 Mbps	HD Video Surveillance	Fiber, 4G LTE
50 Mbps- 100 Mbps	Video Conferencing (Multiple users), Remote Supercomputing	Fiber, 4G LTE, OC-1, OC-3
> 100 Mbps	Real-Time Data Collection, Real-Time Medical Image Consultation	Fiber, 4G LTE, OC-3

Source: Broadband Speed Table

The significant gains from applications such as cloud computing could only be enjoyed if broadband service is adequate enough to support the speeds required in optimizing such a tool. Additionally, sufficient broadband speeds are also required to operate more simplistic web-based tools such as social media networks that can be utilized as marketing techniques. The increased use of cloud computing, and social media are drivers that necessitate universal broadband access for rural users and especially for businesses.

The ever evolving technological environment will continue to challenge the speed and adequacy of fiber optic broadband, thus it is imperative that leading technological advances should reach rural Maryland.

Energy and Environment Issues:

Much of the information available today is found via internet, aside from obvious environmental benefits, universal broadband access will allow and promote rural area residents to educate themselves on energy efficient practices. Having the data at their fingertips will allow access to limitless educational tools for environmentally friendly initiatives. Increased broadband access will allow more rural residents to telecommute thus reducing toxins emitted into the environment from

vehicles. Additionally, the information available on the web will again benefit the users and could potentially reduce electricity expenses for businesses and homes.

The environmental and energy issues discussed below are identified as key components in The National Broadband Plan: Ch.12 Energy and the Environment, as well as issues highlighted in the Recovery and Reinvestment Act of 2009.³¹

Smart Grid

One of the many goals and objectives of the FCC's National Broadband Plan is to increase bandwidth to later support a Smart Grid to supplement to the nation's reliance on foreign oil and fossil fuels. For a Smart Grid to be successful, there are minimum speed requirements in all areas to utilize and contribute to the nation's Smart Grid. The National Broadband Plan suggests,

“The amount of data moving across Smart Grid networks is modest today but is expected to grow significantly because the number of devices, frequency of communications and complexity of data transferred are all expected to increase. Various parties have attempted to estimate bandwidth requirements; none expect existing narrowband communications will be sufficient. Sempra Energy has found that it will require “pervasive mobile coverage of at least 100 kbps to all utility assets and customer locations.” Similarly, DTE Energy believes it will require connectivity of 200-500 kbps to support pole-mounted distribution devices.

While the Smart Grid is not expected to take shape for several years, it is a foresight that should be considered because the broadband initiative will thread closely with future speed requirements. However, as mentioned previously, estimating the future bandwidth needs is difficult as technology continues to rapidly evolve. It is difficult to pinpoint the exact needs in 15 to 20, years when a new

³¹ Chapter 12: Energy and the Environment; National Broadband Plan; Broadband USA;
<http://www.broadband.gov/plan/12-energy-and-the-environment/>

technology could easily be introduced and deem fiber optics obsolete relative to speed capabilities.

Smart Homes and Buildings

There are a lot of “what ifs” in the technology industry with regards to changing the way we operate our lives. One of the objectives of the broadband deployment plan is to educate broadband users on the full potential broadband provides with increased bandwidth. Smart homes and buildings are on the horizon for the general public and would compliment a Smart Grid in the future. Through the use of Mobile broadband, people can check their electricity usage regularly. The National Broadband Plan describes, “Even without price incentives, simply providing consumers better information about their energy use has been shown to reduce total consumption by 5-15%, equating to savings of \$60-\$180 per year for the average American household. Making better information widely available would result in billions of dollars in savings per year by consumers and businesses.”³²

While smart homes and businesses are not in the immediate future for rural area users, there are major benefits to be enjoyed by the users of broadband that include aspects of smart homes and businesses. Broadband access would allow users to be more energy conscious, because they could see their usage in real-time correlating to less energy expenses for home and business owners. The overarching goal to achieve is to keep the future of broadband in the mind of rural users in Upper Eastern Shore and to explore the possibilities and luxuries it may bring to their everyday lives.

³² Average Monthly Bill Data by Census Division, and State 2008, attached to EIA, Electric Sales, Revenue, and Average Price 2008 (2010). <http://www.eia.gov/cneaf/electricity/esr/table5.html>

Future Sustainable Information Technology

Creating a sustainable communication channel through information technologies is also a clear objective of the National Broadband Plan. While broadband will bring unquantifiable benefits to the Upper Eastern Shore, it is the responsibility of each region to consider ways to make the benefits sustainable. One way regions can begin managing a sustainable network is to be conscious of those electronics that use up unutilized energy. The approach to sustain energy is to first manage current energy sources and reduce the demand for unused energy. After energy consumption is managed, the transmission of energy must become more efficient so that the use of Broadband is feasible without drastically increasing the electric bill.

Environmental Issues

While there will be long term benefits in energy efficiency and greenhouse gas emissions, there will also be some temporary environmental concerns with fiber construction. The Environmental Assessment conducted by Columbia Telecommunications Corporation (CTC) on behalf of OMBN described the potential environmental consequences of fiber installation in detail.

The Environmental Assessment found that, “while maintenance of underground fiber is minimal, there may be slightly higher green house emissions during construction because of the additional time and equipment needed for burial where underground conduit is not available...any increase would be temporary and would cease after construction. Moreover, emissions would be lower than the CEQ threshold.” Additionally, the soil and geologic condition was evaluated to reveal that, “because all construction will be in public rights –of-way and the type of construction does not alter soil content, no impact is anticipated on the geology and soil in the construction area under the preferred alternative.”

Also, the state of water resources was considered as an element of the Environmental Assessment conducted by the CTC. The report has determined, “there is no anticipated impact on designated wetlands and associated buffers. The preferred alternative relies, to the maximum extent practicable, on existing conduit and bridge attachments, thereby minimizing the risk of diversion of waters, erosion, and construction runoff.” It will be the responsibility of OMBN to make sure construction is in compliance with best practices determined by the “2010 Maryland Standards and Specifications for Soil Erosion and Control.”

Through the extensive value that adequate broadband will add to the Upper Eastern Shore through energy efficiency and environmental risk management, it is clear that the implementation of fiber will prove beneficial to the region. Environmental risk mitigation for construction will yield a cohesive backbone that serves the Upper Eastern Shore with adequate broadband to serve unserved and underserved residents. Additionally, the increased ability for employees to telecommute from home will reduce greenhouse gas emissions from fewer vehicles. Inevitably, efficiencies gained by proficient energy sources and educational opportunities will bolster the Upper Eastern Shore’s economic standing with reduced energy consumption and costs.

Public Policy Issues

The intricacies of public policy could by far be the most controversial aspect of the broadband deployment initiative. The last mile issues that will be covered more in-depth in sub-section F of Section IV will also present a challenge in monitoring and controlling after the broadband is implemented. However, the public policy issues and strategies for Maryland have been derived on the basis of the practices to deploy the broadband nationwide in Canada and Singapore, both of which have similar initiatives. (More information on the benchmark that Maryland can follow is described under Appendix C: Best Practices).

Singapore's national broadband initiative, Next Generation Services Innovative Program (NGSIP), suggests that Retail Service Providers (RSP) will be the catalyst to connecting users with the broadband network. If Maryland chooses to adopt a similar strategy, service providers will indeed be the key players in the last mile connection portion of implementation. Therefore, service provider buy in is critical to the execution of the Maryland broadband initiative.

Similarly, Georgia has explored and begun implementation of the potential of treating broadband as a utility.³³ The press release in Columbia County, Georgia highlights an interesting component of their broadband implementation,

'The Columbia County Community Broadband Network project will include 60 free Wi-Fi hotspots in public locations such as parks, the senior center, libraries and community centers. Also, privately-owned Internet carriers will be able to lease access to the network to provide services to areas of the county without broadband Web access.'³⁴

The implementation strategy employed in Columbia County Georgia could also be an option for the Upper Eastern Shore Region because service providers could distribute broadband while leasing fiber usage from MDBC. If a broadband utility company or group of companies emerged, it is likely they would assume the role of on-going maintenance and implementation success. A risk of moving broadband to a utility is higher prices charged to users, as well as monopolization of one broadband provider over the region. Similar to electricity, a sole provider would have total price control and could adjust prices based on terrain complications or population density.

³³ Fetter, Donnie. "Grant Will Bring Broadband Service throughout County | Columbia County News-Times." *Columbia County News-Times / The Web Site for the Columbia County News Times*. 7 Mar. 2010. Web. 14 Feb. 2012. http://newstimes.augusta.com/stories/2010/03/07/new_569090.shtml

³⁴ Columbia County: Fiber Installation Project." *Columbia Count : Home*. Web. 14 Feb. 2012. <http://www.columbiacountyga.gov/Index.aspx?page=4100>

Observing the implementation plans of other broadband programs will allow Maryland to select best practices that most appropriately suit the needs of each county.

Role of Government

Again, similar to Singapore's broadband initiative there must be clear cut guidelines of government involvement. The Upper Eastern Shore Region has the opportunity to choose how much continued involvement from DoIT and the infrastructure providers such as networkMaryland, Maryland Broadband Cooperative will be feasible and realistic for the region. Communication channels and schedules must be drawn and agreed upon to ensure continued service to broadband access in rural Maryland. The physical infrastructure provided by networkMaryland and MdBC will serve only as the foundation for network opportunities for the Upper Eastern Shore Region. Unleashing such opportunities and developing a functional plan to connect to the residents and businesses relies on the service providers consent to take responsibility. The Canadian approach to government's role, on the other hand is far less aggressive than Singapore's involvement. The Upper Eastern Shore Region may find that using MdBC as an adversarial resource during and after implementation will be beneficial to monitor program success following the Canadian Broadband initiative. In fact, in 1999 Caroline County installed fiber optic infrastructure connecting all the county and state owned facilities in Denton, MD. Once this fiber was ready for use, networkMaryland and several other agencies have made agreements to utilize this fiber at no cost, or a small service exchange basis.

In order to achieve a successful broadband initiative, the extent of the role of government should be determined. There could be several ways to do this. One example is for the government to set the goals for the industry, leaving the industry to determine how those goals are to be achieved. Another example is for the goals to be established by the government and future penalties or incentives associated with achieving or not achieving those goals. A third example is the government could

simply set the regulations and leave the goals and ways to achieve them up to the industry, allowing the private sector stakeholders to drive the success of universal access throughout the Upper Eastern Shore Region.

Maintenance and Control

Whether or not the Upper Eastern Shore Region decides to adopt a program similar to that of Singapore or Canada, the topic of monitoring and control must be addressed. Specifically, the plan to maintain fiber networks over time and who will be responsible for orchestrating such activities. If the infrastructure providers are going to be leading maintenance plans, then expected future equipment and costs must be considered in the budget. If the anchor institutions are to maintain the quality of fiber, then they will have to consider this financial burden in their annual budgets as well. Similarly, if service providers shall be responsible, their budgets will be affected and it is likely that consumers may suffer as a result of spiked monthly fees to account for such maintenance costs.

Another issue that may arise as broadband continues to increase in public demand is the presence of a “broadband tax” which requires federal resolution as component of a rural area premium. Different from a broadband service tax charged to each customer by the provider alone, a broadband tax would be a federal or state mandated tax charged to each consumer to allow continued government support of the universal broadband initiative. Such a tax would facilitate service providers and anchor institutions with the means to offset costs incurred from maintenance and equipment expenditures. Users may be penalized with an increase in their bill to sustain a functional infrastructure. Depending on the infrastructure issues mentioned in Section II, Sub-Section B, the costs associated with maintenance may be extensive for certain areas. Counties that have more diverse landscapes could potentially be subject to a higher tax.

Additionally, issues include but are not limited to low population density, lack of infrastructure, and high installation costs that may remain after OMBN's infrastructure initiative. Also, the franchise agreements between service providers and counties are ambiguous in that there are no specific mandates for broadband coverage; therefore providers are ultimately the determining factor in providing access. The answer to these issues will be the emergence of wireless. In other words, the methodology attached to a particular home having adequate broadband access on one road is different from a home five miles down the same road not having access. These issues stem directly from the cost benefit question faced by service providers; however, the increasing push toward wireless will mitigate the occurrence of such coverage issues.

It would be advantageous for each county if a schedule was developed to track and measure success during and after implementation. Also, a regular risk analysis provided by OMBN of potential threats must be evaluated to consider road blocks during deployment. Such threats are identified in the bi-weekly progress report found on OMBN's website which also provides updated connectivity maps for each county.

Section III- Strategies to Achieve Universal Access

In order to achieve the universal access, the following list of the users must be considered as they are the integral part of a broadband target. It is important to know who they are, what are they and how they can benefit from the broadband.

Residential Users

The activities that a household would typically be involved in that could use broadband are communication, entertainment and conducting business. They would be classified under the light users to moderate users needing 1 to 2 Mbps for basic service which includes email, internet surfing, basic video streaming and 6 to 15

Mbps for medium service including high-demand application, online gaming and streaming HD.³⁵ The minimum download speed for these activities is shown below³⁶.

Table 7: Minimum Download Speed Required for the Internet Activities

Activity	Minimum Download Speed (Mbps)
Email	0.5
Web browsing	na
Job searching, navigating government websites	0.5
Interactive pages and short educational videos	1
Streaming radio	Less than 0.5
Phone calls (VoIP)	Less than 0.5
Watching video	na
Standard streaming videos	0.7
Streaming feature movies	1.5
HD-quality streaming movie or university lecture	4
Video conferencing	na
Basic video conferencing	1
HD video conference and tele-learning	4
Gaming	na
Game console connecting to the Internet	1
Two-way online gaming in HD	4

Source: Broadband Speed Guide

The current household population, as per the counties for 2010, comprised of both with access to broadband and/or underserved and the unserved ones, are depicted

³⁵ For Consumers - Maryland Broadband Map; Maryland Broadband Map;
<http://www.mdbroadbandmap.org/Consumers.aspx>

³⁶ Broadband Speed Guide | FCC.gov; Federal Communications Commission.gov;
<http://www.fcc.gov/guides/broadband-speed-guide>

below³⁷. The newly authorized residential buildings are also given which means there would be an increased number of residential users to be served.

Table 8: Population and New Residential Building on the Upper Eastern Shore

County	Population in 2010	New Residential Buildings
Cecil	101,108	67
Kent	20,197	298
Queen Anne's	47,798	61
Caroline	33,066	149
Talbot	37,782	173

Source: US Census 2010

Given the population and number of new residential buildings in each region, and in fact it's increasing trend implies increased need for broadband. This increase means broadband will have to evolve to meet the growing demand. If this is accomplished, there would be significant personal and professional benefits for the Upper residence in enhancing their productivity to perform the activities such as surfing web, downloading videos or games and communicating at home at the given speed or faster than a given speed. Working from a residence, doing school assignments online at home will be easier as well.

Please refer to Appendix A: Table 26 to see the population change in past 10 years in these counties.

Commercial/Industry User

Any business or industry, from small to large, rural to urban, manufacturing to service could benefit from access to broadband. Technology is a significant part of economic development for any company, and broadband is one of the integral parts of technology. "Broadband opens the door to a wealth of tools that businesses can use to streamline workflows, remotely leverage Information Technology resources (such as cloud computing), and take advantage of emerging social media marketing

³⁷ 2010 Census, United States Census 2010; <http://2010.census.gov/2010census/>

technologies. Broadband access can also reduce overhead costs through telecommuting, Web and video conferencing, and by extending the recruiting range for highly skilled personnel. Broadband is especially important for small, rural, and home-based businesses, because it helps level the competitive playing field. Broadband promotes innovation, enables operational streamlining, allows flexibility within the supply chain, and greatly expands the customer base for small businesses.”³⁸

Table 9: Number of Business Establishments in Upper Eastern Shore

Upper Shore Counties	Number of Business Establishments
Cecil	3,191
Kent	1,149
Queen Anne's	2,155
Talbot	1,207
Caroline	2,578

Source: Esri Business Summary, 2009

(For detailed breakdown of the industry as per counties for the Upper Eastern Shore, please refer to Appendix A: Table 16 through Table 20).

These business establishments consist of sectors like construction, manufacturing, retail trade, wholesale trade, finance and insurance, information, professional, scientific and technical services, management of companies and enterprises and others. The data of 2009 for Cecil County, number of retail trade is the highest amongst all other sectors that was 273 and the second largest was construction service with 241 establishments, followed by other services (except public administration) with 206. Similarly, in Kent County the number of establishments under the retail sector was the highest as well with 96 establishments,

³⁸ For Businesses - Maryland Broadband Map; Maryland Broadband Map;
<http://www.mdbroadbandmap.org/Business.aspx>

followed by construction with 77 establishments and 72 other services (except public administration). Queen Anne’s County, on the other hand, had 267 construction service establishments which were the highest followed by retail with 232 establishments and 173 for professional, scientific, and technical services. In Caroline County, number of construction was the highest amongst all other sectors that was 137 and the second largest was retail trade with 94 establishments, followed by other services (except public administration) with 71. On the other hand, Talbot County had 247 retail trade establishments which were the highest followed by construction with 218 establishments and 163 for health care and social assistance. The following table shows the total employment data for the selected sectors in 2009 for the given counties.

Table 10: Total number of Full time and Part Time Employment on the Upper Eastern Shore

Industry	Cecil County	Kent County	Queen Anne’s County	Caroline County	Talbot County
Retail Trade	4729	1192	2740	1454	3138
Construction	2340	835	1942	1316	1805
Professional, Scientific, and Technical Services	1420	624	1464	419	2476
Health Care and Social Assistance	3908	1697	1318	1705	3916
Other Services (except public administration)	2589	722	1361	890	2075

Source: Bureau of Economic Analysis

Please refer to Appendix A: Table 21 through 25 for Total Employment data for other sectors.

Light/Heavy Users

Not all of the industrial/business sectors are fully technologically driven. For example, the construction industry might not have to use 15 Mbps above speed compare to the professional, scientific and technical service industry that classifies

construction industry as a light user. However, the implication is that all the businesses use communication technology to some extent. With high number of establishments for the industry such as professional, scientific and technical services and retail in the counties employing the highest number of people, high speed broadband would be necessary for making the business operation efficient as these sectors come under the heavy user classification. The commercial/industrial user would be categorized under moderate user (6 to 15 Mbps) or heavy internet user (15 Mbps above). In fact, even amongst these users, some of the industries or smaller companies could fall under light user (1 to 2 Mbps). For example, a small construction business would not necessarily need 15 Mbps above capacity of broadband for basic functions of emailing, web surfing, video conferencing. The reason a sector would be categorized under light, medium or heavy user depends upon the activity they are involved in with the number of employees, who are the actual users. The following table shows the classification of the kind of user on the basis of the functions that a business carries out along with the number of users³⁹.

Table 11: Classification of the Users

	Light Use(Basic Functions only: email, web surfing, basic streaming video	Moderate Use (Basic Functions plus one high-demand application: streaming HD, video conferencing, OR online gaming	High Use (Basic Functions plus more than one high demand application running at the same time)
1 user on 1 device (e.g., laptop, tablet, or game console)	Basic	Basic	Medium
2 users or devices at a time	Basic	Basic	Medium/Advanced
3 users or devices at a time	Basic	Basic/Medium	Advanced

³⁹ Household Broadband Guide | FCC.gov; Federal Communications Commission.gov; <http://www.fcc.gov/guides/household-broadband-guide>

Government/ NGO Users

The majority of anchor institutions are Government or Non-Government entities. Particularly, networkMaryland has been a resource to provide a high speed network to all government agencies throughout the state by utilizing resource share fiber optics. These institutions will assist in increasing bandwidth to provide adequate coverage to rural areas in the Upper Eastern Shore Region. The following entities are critical to the success of universal access, as many of them serve as hubs to supply broadband to the region. Creating and maintaining support from each sector below and especially anchor institutions will also be critical to broadband deployment success. Universal broadband access will allow institutions across the Upper Eastern Shore to become more efficient in their practices and enjoy greater economic strength in their communities.

K-12 and Higher Education / Library / Museums

Table 12: Number of Public and Private Schools in Upper Eastern Shore Maryland

County	Number of Public Schools	Number of Private Schools
Upper Shore Region	71	27
Cecil	29	11
Kent	8	4
Queen Anne's	15	6
Caroline	10	0
Talbot	9	6

Source: US Census 2010

Ninety-eight public and private schools on the Upper Eastern Shore Region consists of 12 higher education facilities as anchor institutions that include University of Maryland School of Dentists, Cecil College, Washington College, and Chesapeake College. (Please refer to Appendix A: Table 27, 28, 32 for Cecil County, Table 33,34, 37 for Kent County, Table 38, 39, 42 for Queen Anne’s, Table 44, 45 for Caroline,

and Table 49, 50 for Talbot County on the Upper Eastern Shore for the detailed list of schools, libraries and higher education as anchor institutions).

Deployment of broadband to these schools, libraries and museums in the region means instructors will have access to high-speed world-wide instructional materials. A new infrastructure can allow online assessments of students and give counties quicker ability to gather information on its student population. Relevant to the education system, both public and some private schools, higher education and libraries are centers for anchor activity as shown in above table 12. School systems overall are always looking to utilize new resources and stay abreast with technological advances. Similarly, the teachers and the professors will be able to utilize live video streaming for student benefit and provide an infinite knowledge base for their students via the World Wide Web. Also, the students will have an opportunity to empower themselves to keep up with the world around them and will subsequently become better prepared to make informed decisions later in life.

With the larger number of public schools involvement, it would also be necessary to incorporate as many private schools in universal broadband access. One of the strategies could be to regard private schools as businesses and incorporate them into the connection process in the near future depending on each school's private funding.

Moving on to the libraries, adequate broadband speeds are especially essential to them because online databases are one of the many ways libraries can advertise their books and attract the public. Similarly, universal broadband could also assist the well being of libraries by adopting availability of Kindletm and Nooktm to use as an additional means of renting library books. So far, there are 21 libraries on the Upper Eastern Shore that are anchor institutions. Speaking of the libraries, SAILOR which started in 1989 is a service extended by Maryland's public libraries that provides broadband access for public libraries, schools and local government. SAILOR also provides Maryland public library patrons with access to an extensive collection of

research databases. SAILOR started because of the “Maryland public libraries’ recognition that the future of meeting their customers’ needs for information was electronic access to materials within and beyond the walls of their buildings.” This evolved into the development of the state wide Sailor Network, launched in 1994, while providing of the Sailor Research Databases began in 1996. The Sailor Operations Center, which manages daily operations, is located at the Central Library of the Enoch Pratt Free Library in Baltimore, Maryland. Overall supervision is provided by the Sailor Advisory Committee, a subcommittee of the State Library Resource Center Oversight Commission, and since 2001, funding has been provided by the State of Maryland as part of the grant enabling the Enoch Pratt Free Library to serve as the Maryland State Library Resource Center.⁴⁰ The SAILOR program thus would also benefit exponentially from increased broadband access.

Similar advantages apply to museums on the Upper Eastern Shore in that broadband could bring more plentiful opportunities to increase community awareness. Access to broadband could allow higher feasibility for social media marketing for local museums and libraries to attract greater community activity. Adequate broadband access will allow schools, libraries, and museums the freedom to explore the online world of unlimited information in a timely manner.

Public Safety and Protection / Emergency Response

A component of the National Broadband Plan to connect America includes an initiative to, “Create a nationwide interoperable public safety wireless broadband communications network.”⁴¹ The initiative is a three step process, the first of which is addressed in the preceding plan to achieve universal access. The National Broadband plan describes the first step as,

⁴⁰ Sailor (n.d.). About Sailor. *Sailor Maryland Public Library*. Retrieved July 9, 2012, from <http://www.sailor.lib.md.us/about/Default.aspx?id=54282>

⁴¹ Chapter 13: Economic Opportunity; National Broadband Plan; Broadband USA; <http://www.broadband.gov/plan/13-economic-opportunity/?search=user%2bcoalitions#r13-3> (1/31/12)

“An administrative system to ensure that public safety users of broadband spectrum have the capacity and service they require for their network; they also should be able to leverage commercial technologies to take advantage of the vast number of applications and devices that are being developed for commercial wireless broadband networks.”

The strategic elements that compile the system described above are essential outcomes of the broadband deployment on the Upper Eastern Shore, thus emphasizing the need for successful implementation.

Public safety is one of the government funded entities that will be impacted by universal access. Particularly in rural locations, police departments and emergency response facilities must work closely with each other to provide fast and efficient processes to ensure community well being. There are total 56 anchor institutions that are related with public safety on the Upper Eastern Shore. (Please refer to Appendix A: Table 30, 36, 41, 47, 52 for the detailed list of public safety Anchor institutions in each county under Upper Eastern Shore). These anchor institutions are able to support in connecting with the other residences and businesses in unserved/underserved area of the Upper Eastern Shore Region.

Specific to emergency response facilities, adequate broadband would provide faster response time by accurate location information and instant communication to those in need. Public safety as a whole could benefit from universal access by exploiting the availability of information to observe and collect data to influence policy decisions. A critical advantage to adequate broadband deployment is gathering real time data to improve and increase efforts to ensure public safety. Unexpected threats, such as natural disasters and the like, could be better managed by broadband by communicating perceived risks to community members faster and more efficiently. The impacts of adequate broadband could reduce the severity of catastrophic incidences.

To increase adequate coverage successfully, rural Maryland’s public safety and emergency response entities must recognize how universal broadband can improve their overall quality of life.

Healthcare

Table 13: Average Employment in Health Care Services for Upper Eastern Shore

County	Average Employment in Education and Health Services (2010)	Percentage of Total Employment in Education and Health Services
Cecil	3,586	12.81%
Kent	1,913	25.03%
Queen Anne's	1,040	7.88%
Caroline	1,338	15.79%
Talbot	3,625	20.41%

Source: Maryland Department of Labor and Licensing Regulations

The charts above depict the number of individuals working in healthcare institutions as well as those in the education facilities. These employees in the given industry will ultimately be the users of broadband upon its successful implementation.

The combination of Health care and Social assistance represents a significant percentage of the workforce for the Upper Eastern Shore. Given the significant number of employment in healthcare industry which has ability to impact each and every member of the community, the need of broadband cannot be stressed enough. Specifically, the application of telemedicine in a health industry requires adequate broadband facilities which would prove beneficial to the Upper Eastern Shore residents. Such advantages include patients having access to advance medical services without the need for excessive travel to specialists. Telemedicine will also provide ways to transfer knowledge among professionals which can help reduce costs and increasing productivity.

Likewise, there are other numerous opportunities for healthcare systems to benefit from universal access to broadband. E-care is a growing method to treat

patients in remote locations and maintain costs for providers. The application of such a revolutionary practice would only be feasible if the rural areas would obtain adequate broadband speed. The National Broadband plan also emphasizes that, “Broadband and health IT will transform health care, simultaneously enabling better outcomes and lowering costs. Electronic Health Records and Remote Monitoring technology could alone create over \$700 B in net savings over 15-25 years. The strategic take away from the benefits described by the FCC (Federal Communications Commission) is that broadband can not only decrease costs within the health service industry, but concurrently prevent spikes in healthcare costs for the community members. Efficiencies seen within healthcare facilities will also be enjoyed by patients with better doctor-patient interactions and ease of information retrieval. (Please refer to Appendix A: Table 29, 35, 40, 46, 51 for the detailed list of the health care facilities and social assistance that are assigned as anchor institutions).

Local / County / State / Other Federal Administrative

Local, county, and state governments can benefit from the same efficiencies as all other sectors mentioned thus far. Online transactions and communications are a faster and more productive means of operations for all organizations including government organizations. The FCC suggests, “Broadband holds the potential to move all government forms online, eliminating paperwork” and, “through strategic use of broadband-enabled technologies, the federal government has the opportunity to become a model of efficiency and performance.” Again, streamlining processes will benefit employees working with local, county, and state governments as well as the inhabitants of such counties. With greater broadband availability in the region, the information, any paper work and task to be performed is moved online which would necessitate cyber security efforts.

The following table shows the average number of employees in the government institutions who will be affected by the availability of broadband. While broadband means each employee listed below will be more productive by improved

processes, the numbers also represents employees that will have to be considered for training to learn new streamlined processes.

Table 14: Average Employment in Federal, State, and Local Governments for Upper Shore

County	Average Annual Employment, Federal Government	Average Annual Employment, State Government	Average Annual Employment, Local Government	Average Annual Employment, Total Government
Cecil	1,469	319	4,203	5,991
Kent	87	225	720	1,032
Queen Anne's	108	198	2,326	2,632
Caroline	103	168	1,313	1584
Talbot	300	201	1,413	1,914

Source: Maryland Department of Labor and Licensing Regulation

As per the above table, Cecil County seems to have most of the government employment in the Upper Eastern Shore region followed by Queen Anne’s, Talbot, Caroline and Kent County. These significant numbers of government employees in the Upper Eastern Shore Region suggests additional training for streamlined processes so they can understand how to utilize the improved broadband capabilities to be more productive. As previously stated, increased cyber security initiatives may accompany increased broadband access for federal, state, and local government entities as a component of additional training.

Federal Military / Homeland Security

In addition to government facilities, all other Federal facilities will also benefit from increased broadband quality. Faster communication and secure broadband networks will allow the government to communicate and respond to complicated circumstances more efficiently. A risk that coincides with faster more accessible broadband is a need for more security efforts. Particularly, military and homeland

security facilities must have superior knowledge on the impact of adequate broadband.

Harnessing broadband support from all Government and Non-Government entities will reduce implementation risk and ensure higher likelihood of success. User management and education will have to be an ongoing effort to build and maintain universal access in the Upper Eastern Shore Region. Communicating the benefits of broadband must be a consideration when designing a monitoring and control plan after implementation to facilitate continued coverage to rural users. By continuously promoting and suggesting ways government and non-government users can improve their jobs and increase efficiency, universal broadband deployment will be successful because community members will be more likely to support implementation.

Section IV- Solutions to Implement Recommendations of Plan

Role of Major Stakeholders

The Tri-County Councils of the Upper Eastern Shore including the Mid-Shore Region can decide the mix of roles and responsibilities in order to have control over the outcomes of the Upper Eastern Shore broadband deployment plan. Stakeholders will be involved in processes regarding repairs to the network backbone, how quickly repairs will happen if there is damage, and what the recovery process entails. Key stakeholders may also determine connectivity of new community anchor institutions in the future. The following is a list of some of the stakeholders:

Federal Government

State Government

Maryland Broadband Cooperative (MdBC)

One Maryland Broadband Network (OMBN)

Rural Users

Service Providers

Upper Shore Regional Council

Mid-Shore Regional Council

Maryland Department of Information Technology (DOIT)

Broadband Technologies Opportunities Program (BTOP)

Inter County Broadband Network

Recommended Implementation Solutions and Associated Estimated Costs

Following are couple recommendations that Upper Eastern Shore may consider to ensure successful implementation of broadband deployment.

Speed Tests

The speed tests should be administered in each county to measure the effect of fiber installation in rural communities. These speed tests could serve as a metric to compare counties in the Upper Eastern Shore Region against one another by measuring the success of broadband implementation. The frequency of speed test could be determined as per the funds available and decisions made by stakeholders for broadband deployment plan. Similarly, the costs associated with speed tests, and maintaining fiber in each county in the Upper Eastern Shore could be determined by the stakeholders. Even though it is unclear as to who will be responsible for gathering and publishing the speed testing information, it may be reasonable to assume that the particular party responsible for gathering the information will absorb the costs associated with testing. If quarterly speed tests are to be considered, the summation of those reports will be compiled in a year-end report to measure the trend of average broadband speeds over time. Also, it is suggested that the speeds be reported by Anchor Institutions because a survey of the entire region would be cost prohibitive.

Promotional Campaign

A promotional campaign could be geared towards providers and the end users. Raising community awareness about the benefits of broadband could assist in revenue generation for the providers. In fact, they could solicit their new and improved services to the previously unserved or underserved rural users and businesses. An increase in public awareness will educate and possibly encourage current users to upgrade their broadband devices. Subsequently, an increase in awareness which could help in generating more demand for service, hence increase in customer base and revenue, could be an enticing factor for the providers. One of the subcomponents of a promotional campaign could be a detailed press release after completion of fiber installation; it should be issued to commend the hard work enlisted in this initiative and promote community awareness about broadband availability. The press release could compare the average speeds before and after implementation to signify the accomplishments made by the project.

Schedule for Short and Long-Term Implementation

Table 15: County Backbone Schedule Upper Eastern Shore

Upper Eastern Shore Counties	Sections (UG/Aerial)	Backbone CXM Completed	Backbone CXM Plan Begins	Backbone CXM Plan Ends
Cecil County	12 (2UG/10 Aerial)	0	May-7-2012	Mar-26-2013
Kent County	6 (2 UG/4 Aerial)	0	May-24-2012	Dec-4-2012
Queen Annes	12 (6 UG/6 Aerial)	0	May-4-2012	Oct-30-2012
Caroline County	8 (8 UG/0 Aerial)	0	Jul-5-2012	Dec-5-2012
Talbot County	1 (1 UG/0 Aerial)	0	Mar-19-2012	Dec-5-2012

The short term goals relevant to BTOP regarding the fiber construction and community anchor institutions are still in the implementation phase as the table depicts. Once the short term goals are on their way to achievement, long-term goal implementation would follow gradually.

Methods of Documenting Outcomes in Plan Implementation for Region

To achieve complete success of the implementation plan for the Upper Eastern Shore there must be documented outcomes of implementation progression before and after implementation is complete.

Each county must coordinate with MdBC to align time lines with the rest of the state in terms of progression documentation. By a means of performance measurement, timely reports should be submitted by each county to its respective board to communicate that plan to the cooperative. The plan should consist of expected dates of construction areas, Anchor Institution connections, and percentage completion of the entire project. Additionally, each plan should indicate specific risks to the next segment of progression and identify actions taken to mitigate those risks. Timelines will allow each county to stay on track and maintain and foresight what is coming in the near future. In addition to the timelines provided, it is strongly recommended that each county review previous timelines to increase learning and continuously improve processes. This method of documentation will ensure a timely completion of implementation and provide broadband to rural users as fast as possible with exceptional quality. The reports will be very similar to the progress reports released by One Maryland Broadband Network; however this timeline will be from a holistic viewpoint that considers the “big picture” in terms of completion. Each county should be able to tell how far away they are from completion and what obstacles may stand in their way.

Industry Economic Development, Economic Strategies and Objectives

The goal of every industry is to progress and make profits, and internet has been an integral part for fulfilling their objectives and for overall developed information/digital economy. Almost all businesses/industries need internet to conduct their business from simple emails, payments, billing, and advertisement to decision making. In order to carry out these business functions properly, appropriate internet speed is necessary, and access to the high speed internet is what broadband technologies is trying to provide to rural areas. The business market area expands as the internet expands leading a business to go national from local, and international from national. For example, there are banks that now operate on an international level compared to the traditional ones in the past that were limited to holding deposits from local, loaning to the local business community and farmers. This also increases the competition in the market providing consumers best products at reasonable prices.

Broadband internet availability may lead to increased efficiency in various industrial sectors since there is access to updated information, knowledge, change, individual perception of products and services, convenience in communicating and transacting. The relationship between particular industries and broadband in terms of achieving their economic goals are briefly explained below:

Rural Retailers

The number of business establishments within the retail industry is significant in a majority of the counties on the Upper Eastern Shore. As previously mentioned, there are 273, 96, 232, 94 and 247 retail establishments in Cecil, Kent, Queen Anne's, Caroline and Talbot County respectively under the Upper Eastern Shore Region per data in 2009. The use of broadband makes it easier for retailers' operational efficiency, strategic positioning, and market niche exploitation which will help them achieve their economic progress.

Farm Businesses

This industry could take advantage of broadband in gathering information, price tracking, and being efficient in e-commerce. The farming industry can improve farm purchases by making them online, keeping track of supplies and strengthening relationships with suppliers. As of 2009, there are total of only 28 forestry, fishing, hunting, and agriculture support establishments in the entire Upper Eastern Shore.

Health Care

Providing adequate health care has been a challenge in rural areas. However, broadband availability could reduce the given challenge via tele-medicine and tele-health. More accessible health information, products and services could be provided to the public which will help reduce transportation time and expenses. Similarly, medical technologies can be utilized to provide proper health care facilities to residents. The number of health care services as per 2009 in Cecil County is 161, 70 in Kent County, 71 in Queen Anne's, Caroline is 44 and Talbot is 163 within the Upper Eastern Shore Region.

Education

As previously explained about the education sector there are total 98 Public and Private Schools in the Upper Eastern Shore. Education is a significant contributor for the economic development in any region. Availability of broadband in the education sector helps the students in learning, parents in connecting with the universities and universities in connecting with outside resources. For those involved in the working world, distant education is an option for completing their course of study which will also benefit the schools and universities in reducing overhead.

Last Mile Issues

The completion of anchor institutions and the middle mile fiber construction will not necessarily mean that the end users will have immediate access to broadband because there are a number of other steps that need to be completed prior to access. For example, laterals for community anchor institutions and huts need to be built for securing the electronic equipments involved in network and the connection to backbone is necessary to offer the services to the public and residences. In simple words, the responsibility to connect broadband to households and businesses lie on the providers. With this being said, there would be few challenges to overcome while fulfilling these steps which are the last mile issues.

Last Mile issues for deploying broadband in the Upper Eastern Shore Region could be availability of the providers to offer services to the consumers and businesses and limited infrastructure. Providers may be hesitant to utilize the middle mile network provided by MdBC. The reasons for the providers being reluctant could simply be the lack of economic benefits to them and perception of high cost associated with offering services in the rural areas. Rural areas with low population density in comparison to urban areas have lower economic scale for the providers, because fewer people in a given geographic region share the cost of infrastructure. “Renkow found that population density was more important than income in driving broadband deployment. The relative insensitivity of local income to patterns of broadband deployment may indicate that broadband providers perceive demand as being highly income inelastic. If so, cost of physical infrastructure would be the primary consideration in extending capacity into unserved or underserved areas.”

Considering the given quote, as the population and the number of business establishments on the Upper Eastern Shore is increasing (Please refer to A: Table 24 for population change in past 10 years), resulting in rise of demand, the issue of high cost could be properly addressed. Moreover, the broadband cooperative’s effort of providing the middle mile network and bearing the initial cost of operation for the

providers is also supportive of solving the high cost issue. Nevertheless, there is a necessity of persuading the providers to get them involved in participating in access of broadband to the rural population and businesses. One of the ways this could be accomplished is via conference where all the providers in the area shall be invited to participate. The conference will emphasize the benefits to providers of offering services to rural areas. Similarly, as mentioned before a promotional campaign could be another way to raise community awareness that lead to increased demand which could ultimately allure providers. Even if four out of ten providers participated, the competition eventually would be created and lead to an increased interest in the rest of the providers. In turn, the competition will provide competitive prices that will increase adoption among lower income households.

Likewise, one of the other approaches to solve this last mile issue is considering the LTEs. As explained under future technology section of this report, with its capability of providing the faster service over the large area, it may prove very useful in providing internet service to the rural area in the Upper Eastern Shore. This will be an answer to providers for offering internet service to the residences in the rural area without a worry of lower population density and the cost benefit issues. In fact, Verizon Wireless is launching 4G-LTE in 38 U.S. markets and planning on full nationwide coverage in 2013. It intends to utilize 700 MHz to deploy 4G-LTE that will cover entire lower 48 states and Hawaii. “To provide access to the 4G LTE network to more of the U.S. population living in rural areas, Verizon Wireless plans to work with rural companies to collaboratively build and operate a 4G network in those areas using the tower and backhaul assets of the rural company and Verizon Wireless’ core LTE equipment and 700 MHz spectrum.”⁴²

⁴² 4G is here: LTE and WiMAX take public safety communications into the future. (2011, January). *Public Safety IT Magazine*, na, na. Retrieved March 28, 2012, from <http://www.hendonpub.com/resources/articlearchive/details.aspx?ID=208218>

Section V. - Future Direction for Broadband in Rural Maryland

Broadband is and will continue to be a significant factor in the economic development of rural Maryland including the Upper Eastern Shore and in providing the plane level field in terms of resources to the residents of Maryland for their progress. Currently, broadband is more focused on effective deployment in rural areas and in the future, will have a more focused effort on sustainability of broadband technologies.

Broadband Role in The Future

The ultimate goal of a broadband initiative is to sustain broadband coverage throughout the rural Upper Eastern Shore now and in the future. Access will be available for all rural areas with quality and competitive speeds. The role of broadband is to help connect rural communities and allow rural Maryland to compete in the same realm with organizations located within the major cities of Maryland. To emphasize the role of broadband in future, the following initiatives must be maintained and considered to achieve sustainable access.

To maintain sustainable broadband in future, new technologies and coverage must constantly be assessed. For instance, as technology continues to evolve the “range” of adequate service will evolve with it. Efforts to attain sustainability will consider the rate at which technology is evolving, and how much bandwidth users need to utilize common functionalities on the Internet. As previously alluded to, there is not a great demand for operating cloud systems at this time; however broadband speeds will need to be fast enough in future to accommodate such activities. If adequate access is not monitored on a regular basis, rural Maryland will see the emergence of more and more underserved and unserved residents and businesses thus proving the initiative in itself futile. Additionally, even if average speeds remain adequate, the number of unserved and underserved users must be observed. If coverage remains the same, over time it will inevitably become out grown by the

regions. Once adequate broadband is established, more people will migrate to the region and will be able to operate businesses and other entities in the rural areas. As previously mentioned, the increased population growth will ultimately increase demand for broadband access, thus altering the unserved and underserved population. Therefore, to sustain a robust broadband network the pulse of new technologies and user needs must be addressed to eliminate unserved and underserved rural areas.

As a component of accessing adequate service, a benchmark will have to be considered to evaluate how much speed is adequate. This translates into the role of broadband across the country because monitoring the state of broadband elsewhere will correlate to the lag in rural Maryland. If speed tests are adopted as per the recommendations listed in Section IV, the results from speed tests can be compared to average speeds in other counties in Maryland, as well as other states across the country. The comparison will allow the region to be alerted if the average speeds of other counties suddenly increases due to new technology implementation. Speed comparisons will serve as a check to monitor the digital divide on the Upper Eastern Shore.

Another factor essential to a sustainable broadband network is to monitor the provider services. A monitoring system should be put in place to ensure service providers are in fact providing the service to the rural users on a consistent basis. Providers should have the same services available to rural users as they would in other counties and metropolitan areas as long as bandwidth permits the service. Also, the monitoring system should serve to make sure the prices charged to rural users will be competitive with other regions to maintain and support the vision of bringing “affordable broadband to rural America”. With the assistance of MdBC in supporting good relationships with service providers, rural users will receive exceptional service in turn. As additional providers emerge in the marketplace, involvement from MdBC will help advocate for new service providers to start servicing Upper Eastern Shore and promote a competitive environment among providers.

By demonstrating the benefits of broadband as suggested in previous sections, rural users will now understand how broadband can enhance their lifestyles. The emphasis on benefits of broadband will instill the mindset that broadband in future will be a vital organ in all types of operations. Broadband will become a necessity to a productive working environment and the checks and balances proposed will serve as the catalysts to achieving a sustainable broadband network to support the growing need.

Section VI - Conclusion

Moving along with advancing technology is a significant factor for economic development in any area. Therefore, deployment of broadband is necessary to create equal opportunity for the residents and all types of businesses in the Upper Eastern Shore Region to move forward. Broadband would make it convenient for carrying out many activities from simple to complex that will lead to an enhanced quality of life for the people on the Upper Eastern Shore. These activities include but are not limited to the ability to communicate via email, enhancing knowledge and learning through web surfing, distance learning for students, access to abundant books and materials from the library, the ability to work from home who are self employed, video conferencing and training, reduction in expenses such as transportation, access to advanced medicine via tele-medicine, and more efficient business operation. There certainly are issues to overcome in order to successfully implement broadband and enjoy such advantages; however those issues are lightened by players such as DoIT, networkMaryland, and MdBC as they solve the middle mile issues and let the providers play a significant role in connecting to the residential and commercial users. Availability of broadband, which brings opportunity for economic progress, will attract more numbers of residents and businesses that will additionally benefit both the providers and the end users in terms of cost and ability to use varieties of application through broadband. Lastly, the issues and the cost for deploying

broadband are trivial in comparison to the benefits to all the users and for overall economic development of the Upper Eastern Shore Region.

Appendix A: Tables

Business Establishments in Upper Eastern Shore Counties

Table 16: Total Business Establishments in Cecil County

Cecil County NAICS code	NAICS code description	Total establishments
-----	Total for all sectors	1792
11----	Forestry, fishing, hunting, and Agriculture Support	7
21----	Mining, quarrying, and oil and gas extraction	5
22----	Utilities	5
23----	Construction	241
31----	Manufacturing	53
42----	Wholesale trade	79
44----	Retail trade	273
48----	Transportation and warehousing	84
51----	Information	15
52----	Finance and insurance	83
53----	Real estate and rental and leasing	76
54----	Professional, scientific, and technical services	159
55----	Management of companies and enterprises	5
56----	Administrative and Support and Waste Mang and Remediation Srvs	101
61----	Educational services	18
62----	Health care and social assistance	161
71----	Arts, entertainment, and recreation	54
72----	Accommodation and food services	165
81----	Other services (except public administration)	206
99----	Industries not classified	2

Table 17: Total Business Establishments in Kent County

Kent County: NAICS code	NAICS code description	Total establishments
-----	Total for all sectors	668
11----	Forestry, fishing, hunting, and Agriculture Support	5
21----	Mining, quarrying, and oil and gas extraction	2
22----	Utilities	1
23----	Construction	77
31----	Manufacturing	28
42----	Wholesale trade	25
44----	Retail trade	96

48----	Transportation and warehousing	24
51----	Information	5
52----	Finance and insurance	34
53----	Real estate and rental and leasing	30
54----	Professional, scientific, and technical services	57
55----	Management of companies and enterprises	2
56----	Administrative and Support and Waste Mang and Remediation Srvs	27
61----	Educational services	13
62----	Health care and social assistance	70
71----	Arts, entertainment, and recreation	31
72----	Accommodation and food services	66
81----	Other services (except public administration)	72
99----	Industries not classified	3

Table 18: Total Business Establishments in Queen Anne’s County

Queen Anne’s NAICS code	NAICS code description	Total establishments
-----	Total for all sectors	1403
11----	Forestry, fishing, hunting, and Agriculture Support	6
22----	Utilities	1
23----	Construction	267
31----	Manufacturing	43
42----	Wholesale trade	81
44----	Retail trade	232
48----	Transportation and warehousing	51
51----	Information	26
52----	Finance and insurance	67
53----	Real estate and rental and leasing	48
54----	Professional, scientific, and technical services	173
55----	Management of companies and enterprises	3
56----	Administrative and Support and Waste Mang and Remediation Srvs	79
61----	Educational services	16
62----	Health care and social assistance	71
71----	Arts, entertainment, and recreation	20
72----	Accommodation and food services	88
81----	Other services (except public administration)	126
99----	Industries not classified	5

Table 19: Total Business Establishments in Caroline County

Caroline County NAICS code	NAICS code description	Total establishments
-----	Total for all sectors	661
11----	Forestry, fishing, hunting, and Agriculture Support	4
21----	Mining, quarrying, and oil and gas extraction	1
22----	Utilities	2
23----	Construction	137
31----	Manufacturing	27
42----	Wholesale trade	31
44----	Retail trade	94
48----	Transportation and warehousing	49
51----	Information	6
52----	Finance and insurance	33
53----	Real estate and rental and leasing	25
54----	Professional, scientific, and technical services	37
55----	Management of companies and enterprises	4
56----	Administrative and Support and Waste Mang and Remediation Srvs	47
61----	Educational services	3
62----	Health care and social assistance	44
71----	Arts, entertainment, and recreation	7
72----	Accommodation and food services	39
81----	Other services (except public administration)	71

Table 20: Total Business Establishments in Talbot County

Talbot County NAICS code	NAICS code description	Total establishments
-----	Total for all sectors	1556
11----	Forestry, fishing, hunting, and Agriculture Support	6
22----	Utilities	3
23----	Construction	218
31----	Manufacturing	39
42----	Wholesale trade	74
44----	Retail trade	247
48----	Transportation and warehousing	26
51----	Information	28
52----	Finance and insurance	89
53----	Real estate and rental and leasing	66
54----	Professional, scientific, and technical services	150
55----	Management of companies and enterprises	8

56----	Administrative and Support and Waste Mang and Remediation Srvs	91
61----	Educational services	23
62----	Health care and social assistance	163
71----	Arts, entertainment, and recreation	39
72----	Accommodation and food services	123
81----	Other services (except public administration)	159
99----	Industries not classified	4

Employment data for Upper Eastern Shore Counties

Table 21: Total Full Time and Part Time Employment in Cecil County

Description	2009
Cecil County:	
Employment by place of work (number of jobs)	
Total employment	40057
By type	
Wage and salary employment	30433
Proprietors employment	9624
Farm proprietors employment	505
Nonfarm proprietors employment 2/	9119
By industry	
Farm employment	873
Nonfarm employment	39184
Private employment	33008
Forestry, fishing, and related activities	310
Mining	173
Utilities	119
Construction	2340
Manufacturing	4482
Wholesale trade	1063
Retail trade	4729
Transportation and warehousing	2372
Information	341
Finance and insurance	1272
Real estate and rental and leasing	1644
Professional, scientific, and technical services	1420
Management of companies and enterprises	205

Administrative and waste management services	1515
Educational services	825
Health care and social assistance	3908
Arts, entertainment, and recreation	970
Accommodation and food services	2731
Other services, except public administration	2589
Government and government enterprises	6176
Federal, civilian	1437
Military	293
State and local	4446
State government	327
Local government	4119

Table 22: Total Full Time and Part Time Employment in Kent County

Description	2009
Kent County	
Employment by place of work (number of jobs)	
Total employment	12681
By type	
Wage and salary employment	8677
Proprietors employment	4004
Farm proprietors employment	286
Nonfarm proprietors employment 2/	3718
By industry	
Farm employment	602
Nonfarm employment	12079
Private employment	10887
Forestry, fishing, and related activities	294
Mining	42
Utilities	31
Construction	835
Manufacturing	783
Wholesale trade	384
Retail trade	1192
Transportation and warehousing	140
Information	113
Finance and insurance	491
Real estate and rental and leasing	723
Professional, scientific, and technical services	624
Management of companies and enterprises	89
Administrative and waste management services	579

Educational services	762
Health care and social assistance	1697
Arts, entertainment, and recreation	569
Accommodation and food services	817
Other services, except public administration	722
Government and government enterprises	1192
Federal, civilian	80
Military	59
State and local	1053
State government	266
Local government	787

Table 23: Total Full Time and Part Time Employment in Queen Anne’s County

Description	2009
Queen Anne’s: Employment by place of work (number of jobs)	
Total employment	21902
By type	
Wage and salary employment	14195
Proprietors employment	7707
Farm proprietors employment	422
Nonfarm proprietors employment 2/	7285
By industry	
Farm employment	599
Nonfarm employment	21303
Private employment	18501
Forestry, fishing, and related activities	371
Mining	27
Utilities	52
Construction	1942
Manufacturing	857
Wholesale trade	965
Retail trade	2740
Transportation and warehousing	400
Information	235
Finance and insurance	892
Real estate and rental and leasing	1537
Professional, scientific, and technical services	1464
Management of companies and enterprises	171
Administrative and waste management services	1075
Educational services	207
Health care and social assistance	1318

Arts, entertainment, and recreation	714
Accommodation and food services	2173
Other services, except public administration	1361
Government and government enterprises	2802
Federal, civilian	97
Military	138
State and local	2567
State government	192
Local government	2375

Table 24: Total Full Time and Part Time Employment in Caroline County

Description	2009
Caroline County: Employment by place of work (number of jobs)	
Total employment	14051
By type	
Wage and salary employment	9644
Proprietors employment	4407
Farm proprietors employment	489
Nonfarm proprietors employment 2/	3918
By industry	
Farm employment	621
Nonfarm employment	13430
Private employment	11713
Forestry, fishing, and related activities	42
Mining	31
Utilities	48
Construction	1316
Manufacturing	1284
Wholesale trade	454
Retail trade	1454
Transportation and warehousing	1027
Information	44
Finance and insurance	377
Real estate and rental and leasing	565
Professional, scientific, and technical services	419
Management of companies and enterprises	0
Administrative and waste management services	847
Educational services	478
Health care and social assistance	1705
Arts, entertainment, and recreation	204

Accommodation and food services	528
Other services, except public administration	890
Government and government enterprises	1717
Federal, civilian	84
Military	96
State and local	1537
State government	188
Local government	1349

Table 25: Total Full Time and Part Time Employment in Talbot County

Description	2009
Talbot County: Employment by place of work (number of jobs)	
Total employment	27470
By type	
Wage and salary employment	19794
Proprietors employment	7676
Farm proprietors employment	247
Nonfarm proprietors employment 2/	7429
By industry	
Farm employment	310
Nonfarm employment	27160
Private employment	25102
Forestry, fishing, and related activities	313
Mining	43
Utilities	55
Construction	1805
Manufacturing	1316
Wholesale trade	658
Retail trade	3138
Transportation and warehousing	444
Information	425
Finance and insurance	1075
Real estate and rental and leasing	1970
Professional, scientific, and technical services	2476
Management of companies and enterprises	186
Administrative and waste management services	1687
Educational services	455
Health care and social assistance	3916

Arts, entertainment, and recreation	656
Accommodation and food services	2409
Other services, except public administration	2075
Government and government enterprises	2058
Federal, civilian	264
Military	129
State and local	1665
State government	202
Local government	1463

Source: bea.gov

Table 26: Population change in past 10 years

Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Upper Shore Region	177,081	179,514	182,578	186,173	189,661	192,546	195,678	197,865	199,700	201,044
Cecil County	86,464	88,256	90,059	92,369	94,674	96,631	98,568	99,400	99,949	100,796
Kent County	19,266	19,363	19,491	19,544	19,578	19,749	19,854	19,872	20,269	20,247
Queen Anne's County	40,765	41,295	42,600	43,800	44,562	45,056	45,957	46,831	47,465	47,958
Caroline County	29,828	29,905	30,169	30,681	30,807	31,591	32,423	32,973	33,279	33,367
Talbot County	33,890	34,103	34,360	34,563	35,201	35,657	36,063	36,077	36,112	36,262

Source: Maryland Department of planning

Detailed list of Anchor Institutions in Upper Eastern Shore Region

Table 27: Cecil County Schools K-12 Anchor Institutions

Anchor Institution Name	Address	City	Zip Code
MT. AVIAT ACADEMY	399 CHILDS RD CHILDS 21916	CHILDS	21916
RISING SUN MIDDLE SCHOOL	289 PEARL ST RISING SUN MD 21911	RISING SUN	21911
BOHEMIA MANOR MIDDLE SCHOOL	2757 AUGUSTINE HERMAN HWY CHESAPEAKE CITY MD 21915	CHESAPEAKE CITY	21915
BOHEMIA MANOR HIGH SCHOOL	2755 AUGUSTINE HERMAN HWY CHESAPEAKE CITY MD 21915	CHESAPEAKE CITY	21915
WEST NOTTINGHAM ACADEMY	1079 FIRETOWER RD COLORA 21917	COLORA	21917
CECILTON ELEMENTARY SCHOOL	251 W MAIN ST CECILTON MD 21913	CECILTON	21913
IMMACULATE CONCEPTION SCHOOL	452 BOW ST ELKTON 21921	ELKTON	21921
PERRYVILLE HIGH SCHOOL	1696 PERRYVILLE RD PERRYVILLE MD 21903	PERRYVILLE	21903

CONOWINGO ELEMENTARY SCHOOL	471 ROWLANDSVILLE RD CONOWINGO MD 21918	CONOWINGO	21918
ELK NECK ELEMENTARY SCHOOL	41 RACINE SCHOOL RD ELKTON MD 21921	ELKTON	21921
RISING SUN ELEMENTARY SCHOOL	500 HOPEWELL RD RISING SUN MD 21911	RISING SUN	21911
CHESAPEAKE CITY ELEMENTARY SCHOOL	214 THIRD ST CHESAPEAKE CITY MD 21915	CHESAPEAKE CITY	21915
ELKTON CHRISTIAN ACADEMY	144 APPLETON RD ELKTON 21921	ELKTON	21921
LIGHTHOUSE CHRISTIAN ACADEMY	7 PLEASANT VIEW CHURCH RD PORT DEPOSIT 21904	PORT DEPOSIT	21904
ELKTON HIGH SCHOOL	110 JAMES ST ELKTON MD 21921	ELKTON	21921
THOMSON ESTATES ELEMENTARY SCHOOL	203 E THOMSON DR ELKTON MD 21921	ELKTON	21921
LEEDS ELEMENTARY SCHOOL	615 DEAVER RD ELKTON MD 21921	ELKTON	21921
CHERRY HILL MIDDLE SCHOOL	2535 SINGERLY RD ELKTON MD 21921	ELKTON	21921
CALVERT ELEMENTARY SCHOOL	79 BRICK MEETING HOUSE RD RISING SUN MD 21911	RISING SUN	21911
CHARLESTOWN ELEMENTARY SCHOOL	550 BALTIMORE ST CHARLESTOWN MD 21914	CHARLESTOWN	21914
PERRYVILLE MIDDLE SCHOOL	850 AIKEN AVE PERRYVILLE MD 21903	PERRYVILLE	21903
CECIL MANOR ELEMENTARY SCHOOL	971 ELK MILLS RD ELKTON MD 21921	ELKTON	21921
CECIL COUNTY PUBLIC SCHOOLS	201 BOOTH ST ELKTON MD 21921	ELKTON	21921
GILPIN MANOR ELEMENTARY SCHOOL	203 NEWARK AVE ELKTON MD 21921	ELKTON	21921
ELKTON MIDDLE SCHOOL	615 NORTH ST ELKTON MD 21921	ELKTON	21921
NORTH EAST MIDDLE SCHOOL	200 E CECIL AVE NORTH EAST MD 21901	NORTH EAST	21901
NORTH EAST ELEMENTARY SCHOOL	301 THOMAS AVE NORTH EAST MD 21901	NORTH EAST	21901
THE TOME SCHOOL	581 S. MARYLAND AVE NORTH EAST 21901	NORTH EAST	21901
NORTH EAST HIGH SCHOOL	300 IRISHTOWN RD NORTH EAST MD 21901	NORTH EAST	21901
BAINBRIDGE ELEMENTARY SCHOOL	41 PRESTON DR PORT DEPOSIT MD 21904	PORT DEPOSIT	21904
RISING SUN HIGH SCHOOL	100 TIGER DR NORTH EAST MD 21901	NORTH EAST	21901
GOOD SHEPHERD SCHOOL	800 AIKEN AVE PERRYVILLE 21903	PERRYVILLE	21903
PERRYVILLE ELEMENTARY SCHOOL	901 MAYWOOD AVE PERRYVILLE MD 21903	PERRYVILLE	21903
CECIL ALTERNATIVE PROGRAM AT PROVIDENCE	3035 SINGERLY RD ELKTON MD 21921	ELKTON	21921
BAY VIEW ELEMENTARY SCHOOL	910 N EAST RD NORTH	NORTH EAST	21901

	EAST MD 21901		
CECIL COUNTY SCHOOL OF TECHNOLOGY	900 N EAST RD NORTH EAST MD 21901	NORTH EAST	21901
KENMORE ELEMENTARY SCHOOL	2475 SINGERLY RD ELKTON MD 21921	ELKTON	21921
CORNERSTONE CHRISTIAN ACADEMY	290 WHITEHALL RD ELKTON 21921	ELKTON	21921
HOLLY HALL ELEMENTARY SCHOOL	233 WHITE HALL RD ELKTON MD 21921	ELKTON	21921

Table 28: Cecil County Library Anchor Institutions

Anchor Institution Name	Address	City	Zip Code
PORT DEPOSIT 2	13 S MAIN ST PORT DEPOSIT MD 21904	PORT DEPOSIT	21904
CECILTON 2	215 E MAIN ST CECILTON MD 21913	CECILTON	21913
CECIL COUNTY PUBLIC LIBRARY	106 W CECIL AVE NORTH EAST MD 21901	NORTH EAST	21901
NORTH EAST 2	106 W CECIL AVE NORTH EAST MD 21901	NORTH EAST	21901
RISING SUN 2	111 COLONIAL WAY RISING SUN MD 21911	RISING SUN	21911
CECIL COUNTY PUBLIC LIBRARY	515 BROAD ST PERRYVILLE MD 21903	PERRYVILLE	21903
ELKTON 2	301 NEWARK AVE ELKTON MD 21921	ELKTON	21921
PERRYVILLE 2	500 COUDON BLVD PERRYVILLE MD 21903	PERRYVILLE	21903
CHESAPEAKE CITY 2	2527 AUGUSTINE HERMAN HWY CHESAPEAKE CITY MD 21915	CHESAPEAKE CITY	21915

Table 29: Cecil County Healthcare Anchor Institutions

Anchor Institution Name	Address	City	Zip Code
CECIL-KENT HEALTH CENTER	251 S BOHEMIA AVE CECILTON MD 21919	CECILTON	21919
SMITH CREEK ASSISTED LIVING	88 WELDERS LN WARWICK MD 21912	WARWICK	21912
TENNESSEE LOG HOMES OF DE MD AND PA	64 FOREST GLEN LN NORTH EAST MD 21901	NORTH EAST	21901
BAYSIDE COMMUNITY NETWORK	412 OLD ELK NECK RD NORTH EAST MD 21901	NORTH EAST	21901
SIVALINGAM ARUNAL DR	357 STONEY BATTERY RD EARLEVILLE MD 21919	EARLEVILLE	21919
MOTHER TO MOTHER	68 ROSEWOOD DR ELKTON MD 21921	ELKTON	21921
MD STATE CECIL COUNTY DSS	877 OLDFIELD POINT RD ELKTON MD 21921	ELKTON	21921
SHOREHAVEN, INC	31 VANDERLYN DR CHESAPEAKE CITY MD 21915	CHESAPEAKE CITY	21915
SHOREHAVEN, INC	109 HOLLYWOOD BEACH	CHESAPEAKE	21915

	RD CHESAPEAKE CITY MD 21915	CITY	
MCCARTHY ALAN DR	652 BIDDLE ST CHESAPEAKE CITY MD 21915	CHESAPEAKE CITY	21915
SHOREHAVEN, INC	199 SHORT CUT RD CHESAPEAKE CITY MD 21915	CHESAPEAKE CITY	21915
HEARTS & HANDS ASSISTED LIVING	56 ROCK HOLLOW CT ELKTON MD 21921	ELKTON	21921
BEDFORD BOYLSTON MD	111 HIGH ST NORTH EAST MD 21901	NORTH EAST	21901
GHOSH BIJOY K MD	111 HIGH ST NORTH EAST MD 21901	NORTH EAST	21901
KHAN SHAHNAWAZ A DR	111 HIGH ST NORTH EAST MD 21901	NORTH EAST	21901
LENORE-TIETJENS GRILLO MD	111 HIGH ST NORTH EAST MD 21901	NORTH EAST	21901
MONTELEONE ROBERT A	111 HIGH ST NORTH EAST MD 21901	NORTH EAST	21901
RAZULLAH KHWAJA MD	111 HIGH ST NORTH EAST MD 21901	NORTH EAST	21901
UPPER CHESAPEAKE HOSPITAL	5301 PULASKI HWY PERRYVILLE MD 21903	PERRYVILLE	21903
SMITH MUHAMMED MD FACE	303 LANDING LN ELKTON MD 21921	ELKTON	21921
HAROLD E DDS	712 S MAIN ST NORTH EAST MD 21901	NORTH EAST	21901
JACKSON DONALD M	712 S MAIN ST NORTH EAST MD 21901	NORTH EAST	21901
BAYSIDE COMMUNITY NETWORK	27 GREENWOOD ST ELKTON MD 21921	ELKTON	21921
SCHEIDLE ASSOCIATES INC	1930 TURKEY POINT RD NORTH EAST MD 21901	NORTH EAST	21901
PHOENIX PSYCHOLOGICAL SERVICES	1930 TURKEY POINT RD NORTH EAST MD 21901	NORTH EAST	21901
SEASONS HOSPICE & PALLIATIVE	133 N BRIDGE ST ELKTON MD 21921	ELKTON	21921
CECIL COUNTY PEDIATRICS	103 E MAIN ST ELKTON MD 21921	ELKTON	21921
PARK DONG HEE DR	103 E MAIN ST ELKTON MD 21921	ELKTON	21921
NEWSOME CHANTAL	109 E MAIN ST ELKTON MD 21921	ELKTON	21921
TRINITY HOME HEALTH CARE	101 COURT HOUSE PLZ ELKTON MD 21921	ELKTON	21921
MID-ATLANTIC GL CONSULTANTS PA	118 NORTH ST ELKTON MD 21921	ELKTON	21921
REILLY HAROLD F II DOCTOR OF MEDICINE	118 NORTH ST ELKTON MD 21921	ELKTON	21921
SHOREHAVEN, INC	138 PARK TOWNE DR ELKTON MD 21921	ELKTON	21921
HSU JUI-CHIH	223 W MAIN ST ELKTON MD 21921	ELKTON	21921

LABORATORY CORPORATION OF AMERICA	223 W MAIN ST ELKTON MD 21921	ELKTON	21921
ELKTON TREATMENT CENTER	212 BLUE BALL AVE ELKTON MD 21921	ELKTON	21921
UBC	229 E HIGH ST ELKTON MD 21921	ELKTON	21921
UPPER BAY	229 E HIGH ST ELKTON MD 21921	ELKTON	21921
DR JULIANNE WYMAN	132 E PULASKI HWY ELKTON MD 21921	ELKTON	21921
WYMAN JULIANNE M	132 E PULASKI HWY ELKTON MD 21921	ELKTON	21921
BAYSIDE COMMUNITY NETWORK	508 WINDWARD CT ELKTON MD 21921	ELKTON	21921
CHESAPEAKE CARE RESOURCES	180 ARBUTUS ST ELKTON MD 21921	ELKTON	21921
NORTH BAY MEDICAL ASSOCIATES	2959 PULASKI HWY NORTH EAST MD 21901	NORTH EAST	21901
CANLAS A	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
CHRISTIANA CARE HEALTH CENTER	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
DR BERNARD HINES	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
MULVEY FAMILY PRACTICE MD	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
PHYSIOTHERAPY ASSOCIATES UNION REHAB	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
REGIONAL HEMATOLOGY & ONCOLOGY ELKTON	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
TRI-STATE SURGICAL ASSOCIATES	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
WOMEN'S HEALTH ASSOCIATES	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
AARON JOSHUA	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
ADVANCED PLASTIC SURGERY CENTER	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
CARR FAMILY DENTISTRY	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
CHESAPEAKE AUDIOLOGY	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
CHESAPEAKE NEUROLOGY	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
CHESAPEAKE SPORTS AND ORTHOPAEDICS	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
CHESAPEAKE UROLOGY ASSOCIATES	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
CRAIG VICENTE R JR	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
GAVIN MARTIN F DO	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
HUNDAL JAGDEEP S MD	111 W HIGH ST ELKTON MD	ELKTON	21921

	21921		
IKEDA SATOSHI	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
LABORATORY CORPORATION OF AMERICA	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
MA JOSE MD	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
NASHEDS PA	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
ROBINSON NORMAN MD	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
RUSIA MALINI MD	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
TEAL CYDNEY T DR MD	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
VISITING NURSE	111 W HIGH ST ELKTON MD 21921	ELKTON	21921
C & P TEL CO OF MD	104 RAILROAD AVE ELKTON MD 21921	ELKTON	21921
BLACKISTON HEATHER DR DC	4925 PULASKI HWY PERRYVILLE MD 21903	PERRYVILLE	21903
PRO PHYSICAL THERAPY	2314 PULASKI HWY NORTH EAST MD 21901	NORTH EAST	21901
SCHRANK HENRY W DR	235 PLUM POINT RD ELKTON MD 21921	ELKTON	21921
CECIL COUNTY HEALTH DEPARTMENT	401 BOW ST ELKTON MD 21921	ELKTON	21921
BRITTON TIMOTHY W DR	2 BROMPTON CT ELKTON MD 21921	ELKTON	21921
EDGEMOOR MATERIALS OF MD INC	284 QUARRY RD ELKTON MD 21921	ELKTON	21921
CECIL HOME CARE PLUS	423 E CECIL AVE NORTH EAST MD 21901	NORTH EAST	21901
GWIAZDOWSKI JOSEPH	216 S MAIN ST NORTH EAST MD 21901	NORTH EAST	21901
MIAN JAMSHID MD	4863 PULASKI HWY PERRYVILLE MD 21903	PERRYVILLE	21903
OPEN MRI IMAGING & DIAGNOSTIC AT PRINCIPIO	4863 PULASKI HWY PERRYVILLE MD 21903	PERRYVILLE	21903
MARYLAND PAIN INSTITUTE & BEST MEDICAL SERVICE	139 W MAIN ST ELKTON MD 21921	ELKTON	21921
FRANKLIN SQUARE HOSPITAL CENTER	131 W MAIN ST ELKTON MD 21921	ELKTON	21921
MERIDIAN PRIMARY CARE	138 CATHEDRAL ST ELKTON MD 21921	ELKTON	21921
PROMILA SURI M D	138 CATHEDRAL ST ELKTON MD 21921	ELKTON	21921
ADULT DAY SERVICES AT UNION HOSPITAL	152 RAILROAD AVE ELKTON MD 21921	ELKTON	21921
FRIEDBERG BEVERLY H	201 NORTH ST ELKTON MD 21921	ELKTON	21921
LAVINE PAUL B DDS	201 NORTH ST ELKTON MD 21921	ELKTON	21921

PHYSIOTHERAPY ASSOCIATES	211 NORTH ST ELKTON MD 21921	ELKTON	21921
FEM-CARE HEALTH ASSOCIATES LLC	215 NORTH ST ELKTON MD 21921	ELKTON	21921
IVANOVGENNADIV MD	215 NORTH ST ELKTON MD 21921	ELKTON	21921
LENORE-TIETJENS GRILLO MD	215 NORTH ST ELKTON MD 21921	ELKTON	21921
MADARANG MELCHOR E MD	215 NORTH ST ELKTON MD 21921	ELKTON	21921
NADER DABABNEH MD	215 NORTH ST ELKTON MD 21921	ELKTON	21921
BAYSIDE COMMUNITY NETWORK	233 HOWARD ST ELKTON MD 21921	ELKTON	21921
MULVEY FAMILY PRACTICE	104 W MAIN ST ELKTON MD 21921	ELKTON	21921
ON OUR OWN	114 E MAIN ST ELKTON MD 21921	ELKTON	21921
CHERRY HILL VET HOSPITAL	210 MELBOURNE BLVD ELKTON MD 21921	ELKTON	21921
CHESAPEAKE CARE RESOURCES	10 REED HARTNETT ST ELKTON MD 21921	ELKTON	21921
BRANDENBURG CHARLES L JR DDS	1074 AUGUSTINE HERMAN HWY ELKTON MD 21921	ELKTON	21921
CARAWAY MANOR	2375 OLD FIELD POINT RD ELKTON MD 21921	ELKTON	21921
CARAWAY MANOR II	2391 OLD FIELD POINT RD ELKTON MD 21921	ELKTON	21921
CHESAPEAKE CARE RESOURCES	676 BETHEL CHURCH RD NORTH EAST MD 21901	NORTH EAST	21901
KUNKEL SERVICE CO T MD	24 FLINT DR NORTH EAST MD 21901	NORTH EAST	21901
INDIAN FALLS DENTAL CENTER	2057 PULASKI HWY NORTH EAST MD 21901	NORTH EAST	21901
LEATHERWOOD DAVID A DDS	2057 PULASKI HWY NORTH EAST MD 21901	NORTH EAST	21901
PRICE J ADAM DDS	2057 PULASKI HWY NORTH EAST MD 21901	NORTH EAST	21901
REYNOLDS JOHN H DR	28 FLINT DR NORTH EAST MD 21901	NORTH EAST	21901
CECIL COUNTY DRAGWAY	1573 THEODORE RD RISING SUN MD 21911	RISING SUN	21911
LEE ANN NELSON PHYSICAL T	107 CHESAPEAKE BLVD ELKTON MD 21921	ELKTON	21921
RETINA VITREOUS CENTER OF DELAWARE PA	103 CHESAPEAKE BLVD ELKTON MD 21921	ELKTON	21921
SCHAPIRO HOWARD L	103 CHESAPEAKE BLVD ELKTON MD 21921	ELKTON	21921
DELAWARE MARYLAND DENTAL	103 CHESAPEAKE BLVD ELKTON MD 21921	ELKTON	21921
BAYSIDE COMMUNITY NETWORK	1280 PULASKI HWY ELKTON MD 21921	ELKTON	21921
MID ATLANTIC SPINE AND PAIN	101 CHESAPEAKE BLVD	ELKTON	21921

PHYSICIANS	ELKTON MD 21921		
DELMAR SURGICAL CENTER, LLC	103 CHEASPEAKE BLVD ELKTON MD 21921	ELKTON	21921
DELMARVA SURGERY CENTER, LLC	101 CHESAPEAKE BLVD ELKTON MD 21921	ELKTON	21921
UPPER BAY - PRP PULASKI	1275 PULASKI HWY ELKTON MD 21921	ELKTON	21921
BAYSIDE COMMUNITY NETWORK	318 WINDWARD CT ELKTON MD 21921	ELKTON	21921
BAYSIDE COMMUNITY NETWORK	117 STARBOARD CT ELKTON MD 21921	ELKTON	21921
CHESAPEAKE CARE RESOURCES	1950 OLD ELK NECK RD ELKTON MD 21921	ELKTON	21921
SUNNY ACRES	33 DOCTOR CARR RD NORTH EAST MD 21901	NORTH EAST	21901
PASQUALINI CHARLES V JR DR	111 HOWARD ST ELKTON MD 21921	ELKTON	21921
LANDMARK MEDICAL GROUP AT RIVERSIDE	112 DELAWARE AVE ELKTON MD 21921	ELKTON	21921
SHOREHAVEN, INC	108 CONTINENTAL DR ELKTON MD 21921	ELKTON	21921
SHOREHAVEN, INC	153 CONTINENTAL DR ELKTON MD 21921	ELKTON	21921
ALCOHOL & DRUG RECOVERY CENTER	500 LANDING LN ELKTON MD 21921	ELKTON	21921
MARDINEY MICHAEL R JR MD	112 NORTH EAST PLZ NORTH EAST MD 21901	NORTH EAST	21901
CHESAPEAKE ENDODONTICS	68 HEATHER LN PERRYVILLE MD 21903	PERRYVILLE	21903
FOX HOLLOW COFFEE- MD LC	732 E PULASKI HWY ELKTON MD 21921	ELKTON	21921
DELMARVA SURGERY CENTER	189 BELLE HILL RD ELKTON MD 21921	ELKTON	21921
DELMAR SURGICAL & COSMETIC TREATMENT CENTER	205 E MAIN ST ELKTON MD 21921	ELKTON	21921
PEDIATRICS	221 E MAIN ST ELKTON MD 21921	ELKTON	21921
NORTHERN CHESAPEAKE HOSPICE FOUNDATION	229 E MAIN ST ELKTON MD 21921	ELKTON	21921
THRIFT SHOP OF UNION HOSPITAL	106 S MAIN ST NORTH EAST MD 21901	NORTH EAST	21901
ELKTON CHIROPRACTIC NEUROLOGY CENTER	144 APPLETON RD ELKTON MD 21921	ELKTON	21921
SHOREHAVEN, INC	1040 SINGERLY RD ELKTON MD 21921	ELKTON	21921
COENTRY HEALTH CARE	123 MIDLAND DR ELKTON MD 21921	ELKTON	21921
CHESAPEAKE CARE RESOURCES	80 ALGONQUIN DR NORTH EAST MD 21901	NORTH EAST	21901
SACHDEV MADHU S	322 E CECIL AVE NORTH EAST MD 21901	NORTH EAST	21901
NORTH BAY MEDICAL ASSOCIATES PA	322 E CECIL AVE NORTH EAST MD 21901	NORTH EAST	21901

SHAH DINESH B	2327 PULASKI HWY NORTH EAST MD 21901	NORTH EAST	21901
UNION HOSPITAL	147 W HIGH ST ELKTON MD 21921	ELKTON	21921
CHESAPEAKE BEHAVIORAL HEALTH	160 RAILROAD AVE ELKTON MD 21921	ELKTON	21921
PFAFF MARK S DO	160 RAILROAD AVE ELKTON MD 21921	ELKTON	21921
CHESAPEAKE BONE & JOINT CENTER LLC	160 RAILROAD AVE ELKTON MD 21921	ELKTON	21921
COMMUNITY HOSPICES	202 E MAIN ST ELKTON MD 21921	ELKTON	21921
BAYSIDE COMMUNITY NETWORK	36 BRIDGEWELL PKWY ELKTON MD 21921	ELKTON	21921
BAYSIDE COMMUNITY NETWORK	34 BRIDGEWELL PKWY ELKTON MD 21921	ELKTON	21921
KOTERWAS CHRISTOPHER W DDS PA	401 E PULASKI HWY ELKTON MD 21921	ELKTON	21921
UPPER BAY COUNSELING AND SUPPORT SERVICES INC	403 E PULASKI HWY ELKTON MD 21921	ELKTON	21921
ELKTON FOOT & ANKLE CENTER	273 MACKALL ST ELKTON MD 21921	ELKTON	21921
LAUDENBERGER BRECK DPM	273 MACKALL ST ELKTON MD 21921	ELKTON	21921
CLIFFORD CHIROPRACTIC CENTER	270 W MAIN ST ELKTON MD 21921	ELKTON	21921
MAINOLFI JEFFREY OD	1000 E PULASKI HWY ELKTON MD 21921	ELKTON	21921
MUSCELLI DAY O D	1000 E PULASKI HWY ELKTON MD 21921	ELKTON	21921
UNION HOSPITAL	106 BOW ST ELKTON MD 21921	ELKTON	21921
UNION HOSPITAL	106 BOW ST ELKTON MD 21921	ELKTON	21921
SUSQUEHANA ORTHOPAEDIC ASSOCIATES	106 BOW ST ELKTON MD 21921	ELKTON	21921
UNION HOSP OF C	691 AUGUSTINE HERMAN HWY ELKTON MD 21921	ELKTON	21921
LAURELWOOD CARE CENTER AT ELKTON	100 LAUREL DR ELKTON MD 21921	ELKTON	21921
GENESIS ELDERCARE	100 LAUREL DR ELKTON MD 21921	ELKTON	21921
MICHAELSON ROGER I	100 NEWARK AVE ELKTON MD 21921	ELKTON	21921
PHYSIOTHERAPY ASSOCIATES	18 MONTGOMERY DR NORTH EAST MD 21901	NORTH EAST	21901
UPPER BAY-MAIN STREET HOUSING	216 E MAIN ST ELKTON MD 21921	ELKTON	21921
UPPER BAY	235 E MAIN ST ELKTON MD 21921	ELKTON	21921
BAYSIDE COMMUNITY NETWORK	103 HERMITAGE DR ELKTON MD 21921	ELKTON	21921
UPPER BAY COUNSELING &	200 BOOTH ST ELKTON MD	ELKTON	21921

SUPPORT	21921		
UPPER BAY	411 BOOTH ST ELKTON MD 21921	ELKTON	21921
UPPER BAY	421 BOOTH ST ELKTON MD 21921	ELKTON	21921
UPPER BAY	425 BOOTH ST ELKTON MD 21921	ELKTON	21921
UPPER BAY	551 BOOTH ST ELKTON MD 21921	ELKTON	21921
UPPER BAY	539 BOOTH ST ELKTON MD 21921	ELKTON	21921
UPPER BAY COUNSELING	529 BOOTH ST ELKTON MD 21921	ELKTON	21921
UPPER BAY COUNSELING	523 BOOTH ST ELKTON MD 21921	ELKTON	21921
T & T CUSTOM DRYWALL	112 FRIENDSHIP RD ELKTON MD 21921	ELKTON	21921
LEYKO J NICHOLAS DDS PA	1400 ELKTON RD ELKTON MD 21921	ELKTON	21921
NOVACARE REHABILITATION	218 E PULASKI HWY ELKTON MD 21921	ELKTON	21921
SHOREHAVEN, INC	131 PINE VALLEY RD ELKTON MD 21921	ELKTON	21921
CHESAPEAKE CARE RESOURCES	1135 AUGUSTINE HERMAN HWY ELKTON MD 21921	ELKTON	21921
NAJERA ROLANDO A DR	28 BROOKVIEW LOOP ELKTON MD 21921	ELKTON	21921
COVENANT CARE ASSISTED LIVING II	15 PINEHURST CT ELKTON MD 21921	ELKTON	21921
MATT-LEIGH MEDICAL	10 HEATHER CT ELKTON MD 21921	ELKTON	21921
BAYSIDE COMMUNITY NETWORK	103 BUTTONWOOD CT ELKTON MD 21921	ELKTON	21921
KLAUS JOHN DPM	327 CURTIS AVE ELKTON MD 21921	ELKTON	21921
ALLCARE ASSISTED LIVING @ BELVIDERE	1505 BELVIDERE RD PORT DEPOSIT MD 21904	PORT DEPOSIT	21904
MANSPEAKER BRIAN K DR	117 LANDING LN ELKTON MD 21921	ELKTON	21921
OPTOMETRIC ASSOCIATES PA	117 LANDING LN ELKTON MD 21921	ELKTON	21921
RESNICK GERALD M DR	117 LANDING LN ELKTON MD 21921	ELKTON	21921
ADVANTAGE HEALTH CARE SOLUTION	307 N BRIDGE ST ELKTON MD 21921	ELKTON	21921
BAI MAY LAC OMD	139 E MAIN ST ELKTON MD 21921	ELKTON	21921
CHARLES SAMUEL G	139 E MAIN ST ELKTON MD 21921	ELKTON	21921
ELKTON CHIROPRACTIC NEUROLOGY CENTER	139 E MAIN ST ELKTON MD 21921	ELKTON	21921
NORTH BAY MEDICAL ASSOCIAT	126 E HIGH ST ELKTON MD 21921	ELKTON	21921

ALLCARE ASST'D LIVING @ PERRYVILLE	350 BROAD ST PERRYVILLE MD 21903	PERRYVILLE	21903
GWIAZDOWSKI JOSEPH A DDS	107 ALGONQUIN RD NORTH EAST MD 21901	NORTH EAST	21901
MCDONALD CHIROPRACTIC CLINIC	716 N BRIDGE ST ELKTON MD 21921	ELKTON	21921
FAMILY SERVICES ASSOCIATION,INC.	718 BRIDGE ST ELKTON MD 21921	ELKTON	21921
MD RURAL DEV CTR	105 BROWN CT ELKTON MD 21921	ELKTON	21921
NIAZ MUHAMMED A MD	107 N BRIDGE ST ELKTON MD 21921	ELKTON	21921
TRI STATE HEALTH INC	107 N BRIDGE ST ELKTON MD 21921	ELKTON	21921
DAVIS DAMON MD	123 SINGERLY AVE ELKTON MD 21921	ELKTON	21921
PATEL JAYANTILAL K MD	123 SINGERLY AVE ELKTON MD 21921	ELKTON	21921
QUEST DIAGNOSTICS	123 SINGERLY AVE ELKTON MD 21921	ELKTON	21921
DOWS ROBERT H	142 W HIGH ST ELKTON MD 21921	ELKTON	21921
ALLEN REBECCA	102 E CECIL AVE NORTH EAST MD 21901	NORTH EAST	21901
MCCOY HEATHER DC	102 E CECIL AVE NORTH EAST MD 21901	NORTH EAST	21901
NORTH EAST CHIROPRACTIC PA	102 E CECIL AVE NORTH EAST MD 21901	NORTH EAST	21901
CHESAPEAKE CARE RESOURCES	80 MARYSVILLE RD NORTH EAST MD 21901	NORTH EAST	21901
CHESAPEAKE CARE RESOURCES	90 MARYSVILLE RD NORTH EAST MD 21901	NORTH EAST	21901
D & G HOME CARE II	30 HAIMAN LN PORT DEPOSIT MD 21904	PORT DEPOSIT	21904
D & G HOME CARE I	425 COKESBURY RD PORT DEPOSIT MD 21904	PORT DEPOSIT	21904
DAEWON KIM DBS PA	325 BROAD ST PERRYVILLE MD 21903	PERRYVILLE	21903
GARY J GALICKI DDS	605 AIKEN AVE PERRYVILLE MD 21903	PERRYVILLE	21903
SMITH J ALEXANDER DMD	605 AIKEN AVE PERRYVILLE MD 21903	PERRYVILLE	21903
TRIPLE CARE	1616 PERRYVILLE RD PERRYVILLE MD 21903	PERRYVILLE	21903
BILLON JOHN DR AND GRAY ROBERT DR	204 SOUTH ST ELKTON MD 21921	ELKTON	21921
VARMA VIVEK MD	206 SOUTH ST ELKTON MD 21921	ELKTON	21921
DAVITA DIALYSIS CENTER	216 S BRIDGE ST ELKTON MD 21921	ELKTON	21921
ELK RIVER KIDNEY CENTER	216 S BRIDGE ST ELKTON MD 21921	ELKTON	21921
OPEN MRI & AT ELKTON LLC	200 S BRIDGE ST ELKTON	ELKTON	21921

	MD 21921		
ELLIOTT'S ASSISTED LIVING, INC.	446 FRONT ST PERRYVILLE MD 21903	PERRYVILLE	21903
CHESAPEAKE CARE RESOURCES	727 SHADY BEACH RD NORTH EAST MD 21901	NORTH EAST	21901
COHEN AND PUSHIN	178 BAY CLUB PKWY NORTH EAST MD 21901	NORTH EAST	21901
COVENANT CARE ASSISTED LIVING	44 HARFORD VIEW DR PORT DEPOSIT MD 21904	PORT DEPOSIT	21904
BAYSIDE COMMUNITY NETWORK	104 BYWOOD RD ELKTON MD 21921	ELKTON	21921
SANCHEZ CORAZON PANES	14 ROGERS RD NORTH EAST MD 21901	NORTH EAST	21901
UPPER BAY COUNSELING AND SUPPORT	1275 W PULASKI HWY ELKTON MD 21921	ELKTON	21921
BAYSIDE COMMUNITY NETWORK	1288 W PULASKI HWY ELKTON MD 21921	ELKTON	21921
BAYSIDE COMMUNITY NETWORK	1290 W PULASKI HWY ELKTON MD 21921	ELKTON	21921
LENORE-TIETJENS GRILLO MD	1338 W PULASKI HWY ELKTON MD 21921	ELKTON	21921
MULTI-SPECIALTY HEALTH CARE	125 E HIGH ST ELKTON MD 21921	ELKTON	21921
YALICH CLINIC PC	125 E HIGH ST ELKTON MD 21921	ELKTON	21921
GAR-EL DAVID DR	304 NORTH ST ELKTON MD 21921	ELKTON	21921
HEALTHCARE FOR CHILDREN	304 NORTH ST ELKTON MD 21921	ELKTON	21921
HUTTON HANLEY KATHLEEN DR	304 NORTH ST ELKTON MD 21921	ELKTON	21921
PHYSIOTHERAPY ASSOCIATES INC	304 NORTH ST ELKTON MD 21921	ELKTON	21921
VELOTTI THOMAS DR	304 NORTH ST ELKTON MD 21921	ELKTON	21921
CHESAPEAKE CARE RESOURCES	147 OGLE DR CHARLESTOWN MD 21914	CHARLESTOWN	21914
CHESAPEAKE CARE RESOURCES	151 OGLE ST CHARLESTOWN MD 21914	CHARLESTOWN	21914
CHESAPEAKE CARE RESOURCES	216 OGLE ST CHARLESTOWN MD 21914	CHARLESTOWN	21914
HAVEN HOUSE, INC.	1195 AUGUSTINE HERMAN HWY ELKTON MD 21921	ELKTON	21921
MYINT KEVIN DDS	121 BIG ELK MALL ELKTON MD 21921	ELKTON	21921
PRO PHYSICAL THERAPY	9 COMMERCIAL PLZ ELKTON MD 21921	ELKTON	21921
FRESENIUS MEDICAL CARE ELKTON	216 S BRIDGE ST ELKTON MD 21921	ELKTON	21921
UNION HEALTH CARE	20 CRAIGTOWN RD PORT DEPOSIT MD 21904	PORT DEPOSIT	21904
O'LEIGH AESTHETIC SURGERY CENTER	704 DELAWARE AVE ELKTON MD 21921	ELKTON	21921

CHESAPEAKE CARE RESOURCES	560 BARON RD NORTH EAST MD 21901	NORTH EAST	21901
CHESAPEAKE CARE RESOURCES	564 BARON RD NORTH EAST MD 21901	NORTH EAST	21901
SCHAFFER STEPHEN A DR	61 RIVER RD ELKTON MD 21921	ELKTON	21921
MORADI NASSER DDS	82 SHADY BEACH FARM LN NORTH EAST MD 21901	NORTH EAST	21901
ELKTON CARE AND REHABILITATION CENTER	1 PRICE DR ELKTON MD 21921	ELKTON	21921
ABBAY MANOR AT ELKTON I	1 COLONIAL MANOR CT ELKTON MD 21921	ELKTON	21921
ABBAY MANOR AT ELKTON II	2 COLONIAL MANOR CT ELKTON MD 21921	ELKTON	21921
BUTTERWORTH GREG DR DR	360 E PULASKI HWY ELKTON MD 21921	ELKTON	21921
DURNAN JERRY DR	360 E PULASKI HWY ELKTON MD 21921	ELKTON	21921
ISHAK ANDREW DR	360 E PULASKI HWY ELKTON MD 21921	ELKTON	21921
O'LEIGH AESTHETIC SURGERY CENTER	360 E PULASKI HWY ELKTON MD 21921	ELKTON	21921
PRO PHYSICAL THERAPY	360 E PULASKI HWY ELKTON MD 21921	ELKTON	21921
SEIDENBERG PROTZKO EYE ASSOCIATES	360 E PULASKI HWY ELKTON MD 21921	ELKTON	21921
DAVID V MARTINI MD FACS	330 E PULASKI HWY ELKTON MD 21921	ELKTON	21921
TUTRONE RONALD MD	560 E PULASKI HWY ELKTON MD 21921	ELKTON	21921
SHOREHAVEN, INC	48 MARY ANITA CT ELKTON MD 21921	ELKTON	21921
CONOWINGO VETERANS CENTER	775 RAGAN RD CONOWINGO MD 21918	CONOWINGO	21918
BRANDENBURG CHAS L JR DDS	408 PEARL ST RISING SUN MD 21911	RISING SUN	21911
GOLDEN LEGENDS	24 MISTY MEADOWS LN PORT DEPOSIT MD 21904	PORT DEPOSIT	21904
HANGER ORTHOPED	25 CONNELLY CT RISING SUN MD 21911	RISING SUN	21911
NAZARENE ADULT DAY CARE	2626 TOME HWY COLORA MD 21917	COLORA	21917
LAZATIN SALVACION G	1579 BLUE BALL RD ELKTON MD 21921	ELKTON	21921
FOREMAN DOUGLAS DR	106 ELK MILLS RD ELKTON MD 21921	ELKTON	21921
BRENNAN SHAWN C DDS	9 S QUEEN ST RISING SUN MD 21911	RISING SUN	21911
SUN MEDICAL CENTER	9 S QUEEN ST RISING SUN MD 21921	RISING SUN	21921
REYNOLDS RETIREMENT	1574 COLORA RD COLORA MD 21917	COLORA	21917
RISING SUN FAMILY CARE	2626 JACOB TOME	COLORA	21917

CENTER	MEMORIAL HWY COLORA MD 21917		
MONTGOMERY HOUSE/ VET CRAFT	831 HARRISVILLE RD COLORA MD 21917	COLORA	21917
WEST CECIL HEALTH CENTER	535 ROWLANDSVILLE RD CONOWINGO MD 21918	CONOWINGO	21918
CALVERT MANOR HEALTHCARE CENTER	1881 TELEGRAPH RD RISING SUN MD 21911	RISING SUN	21911
BAYSIDE COMMUNITY NETWORK	592 FLETCHWOOD RD ELKTON MD 21921	ELKTON	21921
KHWAJA RAZAULLAH MD	101 COLONIAL WAY RISING SUN MD 21911	RISING SUN	21911
LATTIN NEIL MD LLC	101 COLONIAL WAY RISING SUN MD 21911	RISING SUN	21911
THRESHER OLIVER S JR MD	101 COLONIAL WAY RISING SUN MD 21911	RISING SUN	21911
WEIDNER JOSEPH K JR MD	101 COLONIAL WAY RISING SUN MD 21911	RISING SUN	21911
PRO PHYSICAL THERAPY	52 RISING SUN TOWN CTR RISING SUN MD 21911	RISING SUN	21911
FAMILY DENTAL CARE	50 RISING SUN TOWN CTR RISING SUN MD 21911	RISING SUN	21911
DAYSRING PEDIATRICS	120 RYAN DR RISING SUN MD 21911	RISING SUN	21911
PEAR TREE MANOR	37 PEAR TREE LN COLORA MD 21917	COLORA	21917
REGIONAL HEMATOLOGY ONCOLOGY	1905 STONE GATE BLVD ELKTON MD 21921	ELKTON	21921
REYNOLDS JOHN H DR	12 BREEZEWAY DR ELKTON MD 21921	ELKTON	21921
LIBERTY GARDEN ELDER CARE, INC.	1670 LIBERTY GROVE RD CONOWINGO MD 21918	CONOWINGO	21918
DEER RIDGE MANOR	1126 RIDGE RD RISING SUN MD 21911	RISING SUN	21911
NEPHROLOGY ASSOCIATES PA	711 HARRISVILLE RD COLORA MD 21917	COLORA	21917
BAYSIDE COMMUNITY NETWORK	2024 SINGERLY RD ELKTON MD 21921	ELKTON	21921
BOX HILL SURGERY CENTER	1752 APPLETON RD ELKTON MD 21921	ELKTON	21921
NURSES'N KIDS AT HOME INC	6 JAQUETTE CIR ELKTON MD 21921	ELKTON	21921
DELAWARE MARYLAND DENTAL	1653 ELKTON RD ELKTON MD 21921	ELKTON	21921
VARGHA ABBASIAN	1653 ELKTON RD ELKTON MD 21921	ELKTON	21921
WALK IN CHIROPRACTIC	1657 ELKTON RD ELKTON MD 21921	ELKTON	21921
CENTER FOR PROGRESSIVE LEARNING	248 NORTHEAST RD NORTH EAST MD 21901	NORTH EAST	21901
HILL TOP MANOR	1728 BIGGS HWY RISING SUN MD 21911	RISING SUN	21911
PHYSICAL THERAPY SPECIALISTS	223 E MAIN ST RISING SUN	RISING SUN	21911

	MD 21911		
PHYSICAL THERAPY SPECIALISTS	223B E MAIN ST RISING SUN MD 21911	RISING SUN	21911
UPPER CHESAPEAKE PRIMARY CARE	281 E MAIN ST RISING SUN MD 21911	RISING SUN	21911
CHESAPEAKE UROLOGY ASSOCIATES	16 DALMATION CT RISING SUN MD 21911	RISING SUN	21911
SIMPLY MASSAGE	4201 STONE GATE BLVD ELKTON MD 21921	ELKTON	21921
FAIR HILL FAMILY MEDICINE SPECIALISTS	361 FAIR HILL DR ELKTON MD 21921	ELKTON	21921
ROBERTS BONNIE D O	361 FAIR HILL DR ELKTON MD 21921	ELKTON	21921
VILLAR-VITERBO VANESSA MD	361 FAIR HILL DR ELKTON MD 21921	ELKTON	21921
BOOTH II	1162 EBENEZER CHURCH RD RISING SUN MD 21911	RISING SUN	21911
ELKTON FOOT & ANKLE CENTER	1639 BLUE BALL RD ELKTON MD 21921	ELKTON	21921
UNION UROLOGY ASSOCIATES	2235 BLUE BALL RD ELKTON MD 21921	ELKTON	21921
SINGERLY MANOR ASSISTED LIVING LLC	1800 SINGERLY RD ELKTON MD 21921	ELKTON	21921
LIPMAN MICHAEL B DDS	2204 SINGERLY RD ELKTON MD 21921	ELKTON	21921
PHILLIPS JOHN E DMD	2204 SINGERLY RD ELKTON MD 21921	ELKTON	21921
RIVERSIDE CENTER	636 BROAD ST PERRYVILLE MD 21903	PERRYVILLE	21903
CECIL COUNTY SENIOR CENTER	218 NORTH ST ELKTON MD 21921	ELKTON	21921
BAYSIDE OFFICE CENTER	111 S MAIN ST NORTH EAST MD 21901	NORTH EAST	21901
CECIL COUNTY SPECIAL OLYMPICS	110 NORTH ST ELKTON MD 21921	ELKTON	21921
CECIL COUNTY SENIOR CENTER	214 NORTH ST ELKTON MD 21921	ELKTON	21921

Table 30: Cecil County Public Safety Anchor Institutions

Anchor Institution Name	Address	City	Zip Code
PERRYVILLE FIRE COMPANY / MINKER BANQUET HALL	920 PRINCIPIO FURNACE RD PERRYVILLE MD 21903	PERRYVILLE	21903
CECIL PARAMEDIC THREE	2865 AUGUSTINE HERMAN HWY CHESAPEAKE CITY MD 21915	CHESAPEAKE CITY	21915
CHESAPEAKE CITY FIRE STATION 12	2 CHARLES WHARTON DR CHESAPEAKE CITY MD 21915	CHESAPEAKE CITY	21915
PERRYVILLE VOLUNTEER FIRE DEPT	16 GR DAWSON DR PERRYVILLE MD 21903	PERRYVILLE	21903
HACKS POINT VOLUNTEER FIRE DEPT	1185 GLEBE RD EARLEVILLE MD 21919	EARLEVILLE	21919

CHESAPEAKE CITY VOL. FIRE STATION 2	215 LOCK ST CHESAPEAKE CITY MD 21915	CHESAPEAKE CITY	21915
CECIL COUNTY 911 CENTER	107 CHESAPEAKE BLVD ELKTON MD 21921	ELKTON	21921
PERRYVILLE POLICE DEPARTMENT	448 OTSEGO ST PERRYVILLE MD 21903	PERRYVILLE	21903
COMMUNITY FIRE COMPANY OF RISING SUN - STATION 8	300 JOSEPH BIGGS MEMORIAL HWY RISING SUN MD 21911	RISING SUN	21911
CECIL COUNTY CORRECTIONAL FACILITY	500 LANDING LN ELKTON MD 21921	ELKTON	21921
TOWN OF NORTH EAST POLICE DEPARTMENT	104 W CECIL AVE NORTH EAST MD 21901	NORTH EAST	21901
SINGERLY VOLUNTEER FIRE DEPT - STA 13	300 NEWARK AVE ELKTON MD 21921	ELKTON	21921
WATER WITCH FIRE CO, WOODLAWN STATION - STA 72	1 BILL AMOSS WAY PORT DEPOSIT MD 21904	PORT DEPOSIT	21904
SINGERLY FIRE COMPANY STATION - STA 3	399 E PULASKI HWY ELKTON MD 21921	ELKTON	21921
SINGERLY FIRE COMPANY STATION 14	3074 SINGERLY RD ELKTON MD 21921	ELKTON	21921
CECIL COUNTY BACKUP 911 CENTER	129 E MAIN ST ELKTON MD 21921	ELKTON	21921
PERRY POINT FIRE STATION	26 AVENUE E PERRY POINT MD 21903	PERRY POINT	21903
NORTH EAST FIRE DEPARTMENT	210 S MAULDIN AVE NORTH EAST MD 21901	NORTH EAST	21901
MSP BARRACK M 15	15 TURNPIKE DR PERRYVILLE MD 21903	PERRYVILLE	21903
MDTA	6000 PULASKI HWY PERRYVILLE MD 21903	PERRYVILLE	21903
MARYLAND STATE POLICE TROOP F	2433 PULASKI HWY NORTH EAST MD 21901	NORTH EAST	21901
WATER WITCH FIRE COMPANY - STA 73	409 ROCK SPRINGS RD CONOWINGO MD 21918	CONOWINGO	21918
COMMUNITY FIRE COMPANY OF RISING SUN - STA 18	2846 NORTHEAST RD NORTH EAST MD 21901	NORTH EAST	21901
PARAMEDIC TWO	34 FAIR ACRES RD ELKTON MD 21921	ELKTON	21921
NORTH EAST FIRE COMPANY	2993 TURKEY POINT RD NORTH EAST MD 21901	NORTH EAST	21901

Table 32: Cecil County Higher Education Anchor Institutions

Anchor Institution Name	Address	City	Zip Code
CECIL COLLEGE - FAMILY EDUCATION CENTER	200 HOLLINGSWORTH MANOR ELKTON MD 21921	ELKTON	21921
UNIVERSITY OF MARYLAND SCHOOL OF DENTISTRY	4863 PULASKI HWY PERRYVILLE MD 21903	PERRYVILLE	21903
CECIL COLLEGE ELKTON CAMPUS	105 RAILROAD AVE ELKTON MD 21921	ELKTON	21921
DONALDSON BROWN CONF CENTER	200 MT ARARAT FARM RD PORT DEPOSIT MD 21904	PORT DEPOSIT	21904

CECIL COLLEGE	1 SEAHAWK DR NORTH EAST MD 21901	NORTH EAST	21901
CECIL COLLEGE BAINBRIDGE CENTER	1 SEAHAWK DRIVE NORTH EAST MARYLAND 21901	NORTH EAST	21901

Table 31: Cecil County Community Support Anchor Institutions

Anchor Institution Name	Address	City	Zip Code
CECILTON TOWN MAINTENANCE BLDG	215 E MAIN ST CECILTON MD 21913	CECILTON	21921
CECIL COUNTY 911	107 CHESAPEAKE BLVD ELKTON MD 21921	ELKTON	21917
STATE MULTI-SERVICE CENTER	170 E MAIN ST ELKTON MD 21921	ELKTON	21911
CECIL COUNTY MENS SHELTER	168 W MAIN ST ELKTON MD 21921	ELKTON	21921
CECIL COUNTY SPECIAL SERVICES	105 BROWN CT ELKTON MD 21921	ELKTON	21921
CECIL COUNTY CHAMBER OF COMMERCE	233 E MAIN ST ELKTON MD 21921	ELKTON	21904
CHESAPEAKE HOUSE	96 I95 NB HWY NORTH EAST MD 21901	NORTH EAST	21904
FAIR HILL STATE PARK	300 TAWES DR ELKTON MD 21921	ELKTON	21901
JFK MSP BARACKS BLDG	15 TURNPIKE DR PERRYVILLE MD 21903	PERRYVILLE	21901
D MSP BARRACK F - NORTH EAST	2433 PULASKI HWY NORTH EAST MD 21901	NORTH EAST	21904
TOWN OF EKTON PUBLIC WORKS	207 BLUE BALL AVE ELKTON MD 21921	ELKTON	21921
CECIL COUNTY BOARD OF EDUCATION	201 BOOTH ST ELKTON MD 21921	ELKTON	21903
CECIL COUNTY HOUSING OFFICE/CECIL COUNTY CHILD ADVOCACY CENTER	5 BROWN CT ELKTON MD 21921	ELKTON	21921
COMMUNITY ACTIVITY CENTER	1290 W PULASKI HWY ELKTON MD 21921	ELKTON	21921
PUBLIC WORKS	100 DAIRY ST RISING SUN MD 21911	RISING SUN	21921
CECIL COUNTY FAIR GROUNDS	4640 TELEGRAPH RD ELKTON MD 21921	ELKTON	21921
PERRYVILLE RAIL STATION	450 BROAD ST PERRYVILLE MD 21903	PERRYVILLE	21903
CECIL COUNTY BOARD OF REALTORS	1 BROWN CT ELKTON MD 21921	ELKTON	21915
CECIL COUNTY BOARD OF EDUCATION	555 BLUEBALL RD ELKTON MD 21921	ELKTON	21919
CECIL COUNTY ADMINISTRATION BUILDING	200 CHESAPEAKE BLVD ELKTON MD 21921	ELKTON	21903
SHA TOC MSPF	2433 PULASKI HWY NORTH EAST MD 21901	NORTH EAST	21921
CECIL COUNTY PUBLIC WORKS- SENECA POINT	123 CARPENTERS POINT RD PERRYVILLE MD 21903	PERRYVILLE	21921

CECIL COUNTY DEPARTMENT OF TOURISM	68 HEATHER LN PERRYVILLE MD 21903	PERRYVILLE	21901
WOODLAWN TRANSFER STATION	565 WAIBEL RD	PORT DEPOSIT	21901
CECIL SOIL CONSERVATION DISTRICT	105 CHESAPEAKE BLVD ELKTON MD 21921	ELKTON	21921
BLACK HILL RANGER STATION / CECIL PROJECT	130 MCKINNEYTOWN RD NORTH EAST MD 21901	NORTH EAST	21921
CECIL COUNTY BOARD OF EDUCATION	1637 E OLD PHILADELPHIA RD ELKTON MD 21921	ELKTON	21921
MTA METRO CHARLES CENTER STATION EAST	2024 E OLD PHILADELPHIA RD ELKTON MD 21921	ELKTON	21903
MDTA - JFK MAINENANCE GARAGE 2	568 BOUCHELLE RD ELKTON MD 21921	ELKTON	21903
ELK NECK STATE PARK	4395 TURKEY POINT RD NORTH EAST MD 21901	NORTH EAST	21903
NORTHEAST ENVIRONMENTAL ASSESSMENTS	960 W PULASKI HWY ELKTON MD 21921	ELKTON	21921
TOWN HALL	108 BOHEMIA AVE CHESAPEAKE CITY MD 21915	CHESAPEAKE CITY	21901
ELK NECK STATE FOREST	4395 TURKEY POINT RD NORTH EAST MD 21901	NORTH EAST	21901
MDTA - JFK ADMIN	1 TURNPIKE DR PERRYVILLE MD 21903	PERRYVILLE	21921
DHR	133 E HIGH ST ELKTON MD 21921	ELKTON	21921
COMMUNITY CENTER	3 OLD SCHOOLHOUSE DR PORT DEPOSIT MD 21904	PORT DEPOSIT	21913
STEMMER'S RUN TRANSFERS STATION	45 STEMMER'S RUN ROAD EARLEVILLE MD 21921	EARLEVILLE	21921
CECIL COUNTY SPCA / PET & EQUINE VET. HOSPITAL	3280 AUGUSTINE HERMAN HWY CHESAPEAKE CITY MD 21915	CHESAPEAKE CITY	21921
CECILTON SCALEHOUSE (ROADS DEPT)	146 S BOHEMIA AVE CECILTON MD 21919	CECILTON	21921
CIRCUIT CT	129 E MAIN ST ELKTON MD 21921	ELKTON	21921
DMSB BARRACK M - JFK MEMORIAL HIGHWAY	15 TURNPIKE DR PERRYVILLE MD 21903	PERRYVILLE	21921
CECIL COUNTY RECYCLING	561 WAIBEL RD PORT DEPOSIT MD 21904	PORT DEPOSIT	21921
MVA ELKTON	105 CHESAPEAKE BLVD ELKTON MD 21921	ELKTON	21921
TOWN OF NORTH EAST PUBLIC WORKS	106 S MAIN STREET NORTH EAST MD 21901	NORTH EAST	21915
CECIL COUNTY AIRPORT	166 RAINTREE LN ELKTON MD 21921	ELKTON	21919
CECIL COUNTY LANDFILL	758 E OLD PHILADELPHIA RD ELKTON MD 21921	ELKTON	21921
DEPARTMENT OF PUBLIC WORKS	191 HARRISVILLE RD COLORA MD 21917	COLORA	21901

Table 33: Kent County Schools K-12 Anchor Institutions

Anchor Institution Name	Address	City	Zip Code
KENT COUNTY MIDDLE SCHOOL	402 E CAMPUS AVE CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT COUNTY BOARD OF EDUCATION	5608 BOUNDARY AVE ROCK HALL MD 21661	ROCK HALL	21661
H. H. GARNETT ELEMENTARY SCHOOL	320 CALVERT ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT SCHOOL	6788 WILKINS LN CHESTERTOWN MD 21620	CHESTERTOWN	21620
GALENA ELEMENTARY SCHOOL	114 S MAIN ST GALENA MD 21635	GALENA	21635
ROCK HALL ELEMENTARY SCHOOL	21203 SHARP ST ROCK HALL MD 21661	ROCK HALL	21661
MILLINGTON ELEMENTARY SCHOOL	172 SASSAFRAS ST MILLINGTON MD 21651	MILLINGTON	21651
CHESTERTOWN CHRISTIAN ACADEMY	401 MORGNEC RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
RADCLIFFE CREEK SCHOOL	201 TALBOT BLVD CHESTERTOWN MD 21620	CHSTERTOWN	21620
WORTON ELEMENTARY SCHOOL	11085 WORTON RD WORTON MD 21678	WORTON	21678
KENT COUNTY HIGH SCHOOL	25301 LAMBS MEADOW RD WORTON MD 21678	WORTON	21678

Table 34: Kent County Library Anchor Institutions

Anchor Institution Name	Address	City	Zip Code
ROCK HALL BRANCH	5585 MAIN ST ROCK HALL MD 21661	ROCK HALL	21661
NORTH COUNTY BRANCH	111 B-1 NORTH MAIN S ST GALENA MD 21635	GALENA	21635
KENT COUNTY PUBLIC LIBRARY	408 HIGH ST CHESTERTOWN MD 21620	CHESTERTOWN	21620

Table 35: Kent County Healthcare Anchor Institutions

Anchor Institution Name	Address	City	Zip Code
WHISPERING PINES ASSISTED LIVING, LLC	5811 S HAWTHORNE AVE ROCK HALL MD 21661	ROCK HALL	21661
ROCK OF AGES ASSISTED LIVING, LLC	5307 ELBURN LN ROCK HALL MD 21661	ROCK HALL	21661
GOLDEN RULE ASSISTED LIVING HOME	20806 BAYSIDE AVE ROCK HALL MD 21661	ROCK HALL	21661
COLLIER THOMAS A HEALTHCARE CONSULTING	5306 JOHNSONTOWN RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
FOR ALL SEASONS, INC.- SATELLITE	516 WASHINGTON ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
LABORATORY CORPORATION OF AMERICA	514 WASHINGTON AVE CHESTERTOWN MD 21620	CHESTERTOWN	21620
LACEY JAMES MD	516 WASHINGTON AVE CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT CENTER, INC	711 WASHINGTON AVE CHESTERTOWN MD 21620	CHESTERTOWN	21620

PELCZAR MICHAEL DDS	415 WASHINGTON AVE SUITE 1 CHESTERTOWN MD 21620	CHESTERTOWN	21620
WUN KIN K	415 WASHINGTON AVE SUITE 2 CHESTERTOWN MD 21620	CHESTERTOWN	21620
CROSSROADS COMMUNITY, INC.	104 SCHOOL RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT CENTER, INC	215 CAMPUS AVE CHESTERTOWN MD 21620	CHESTERTOWN	21620
BROWN'S CARE HOME	8385 BROADNECK RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT CENTER, INC	7533 QUAKER NECK RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
ARAUJO FREDDY MD	7781 COUNTRY CLUB LN CHESTERTOWN MD 21620	CHESTERTOWN	21620
MARYLAND STATE GOVERNMENT HOSPITALS	300 SCHEELER RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
SHORE DERMATOLOGY	250 HAACKE DR CHESTERTOWN MD 21620	CHESTERTOWN	21620
A. F. WHITSITT CENTER	300 SCHEELER RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT COUNTY BEHAVIORAL HEALTH	300 SCHEELER RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT CENTER, INC	215 SHEELER RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT CENTER, INC	211 ROLLING RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
ARRABAL JOHN C JR MD	223 HIGH ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
MOORMAN ANTHONY J MD	521 WASHINGTON AVE CHESTERTOWN MD 21620	CHESTERTOWN	21620
PHILLIPS OWEN DR	462 HERON PT CHESTERTOWN MD 21620	CHESTERTOWN	21620
WRIGHT ORTHODONTICS	111 CALVERT ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT COUNTY MEDICAL ADULT DAY CARE	125 S LYNCHBURG ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT COUNTY HEALTH DEPARTMENT	125 S LYNCHBURG ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT COUNTY BEHAVIORAL HEALTH	114 LYNCHBURG ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT COUNTY HEALTH DEPARTMENT - PUBLICK HOUSE	114 LYNCHBURG ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
CHESTER RIVER HOSPITAL CENTER	100 BROWN ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
CHESTER RIVER HOSPITAL CENTER	100 BROWN ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
HICKMAN T TODD	202 S MAPLE AVE SUITE 1 CHESTERTOWN MD 21620	CHESTERTOWN	21620
MISS HEALTHCARE AGENCY	202 S MAPLE AVE CHESTERTOWN MD 21620	CHESTERTOWN	21620
ACCEPTANCE IS THE KEY - LINDA L LIGGETT LCSWC	400 S CROSS ST SUITE 1B CHESTERTOWN MD 21620	CHESTERTOWN	21620

JOHNSON PAUL R MD	400 S CROSS ST SUITE 1 CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT CENTER, INC	214 RADCLIFFE DR CHESTERTOWN MD 21620	CHESTERTOWN	21620
BERMAN ANDREW M DR	841 HIGH ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
CHESTERTOWN PHYSICAL THERAPY SER., INC.	818 HIGH ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
HART HARRY L DR	855 HIGH ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
DONOVAN DAVID C DR	8 BYFORD CT CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT CENTER, INC	415 CAMPUS AVE CHESTERTOWN MD 21620	CHESTERTOWN	21620
HERON POINT OF CHESTERTOWN	501 CAMPUS AVE CHESTERTOWN MD 21620	CHESTERTOWN	21620
CHESTERTOWN NURSING & REHAB CT	415 MORGNEC RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
DAVID H SMITH MD	100 BROWN ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
O'CONNOR GERARD S MD	100 BROWN ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
STODDARD NEIL	100 BROWN ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
TOTAL RENAL CARE MT WASHINGTON	100 BROWN ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
CHESTERTOWN PEDIATRICS	100 BROWN ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
CHESTERTOWN DIALYSIS CENTER	100 BROWN ST CHESTERTOWN MD 21640	CHESTERTOWN	21640
CHESTER RIVER BEHAVIORAL HEALTH	818 HIGH ST SUITE 5 CHESTERTOWN MD 21620	CHESTERTOWN	21620
GHOSH BIJOY K MD FAAOS PA	818 HIGH ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
ROBERT L HENDERSON MD	818 HIGH ST SUITE 3 CHESTERTOWN MD 21620	CHESTERTOWN	21620
CHESTER RIVER MANOR	200 MORGNEC RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT CENTER, INC	903 WASHINGTON AVE CHESTERTOWN MD 21620	CHESTERTOWN	21620
CROSSROADS COMMUNITY, INC.	956 WASHINGTON ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
AQUILLA JOSEPH B MD	120 SPEER RD SUITE 1 CHESTERTOWN MD 21620	CHESTERTOWN	21620
INTERNALL MEDICINE ASSOCIATES LLC	122 SPEER RD SUITE 5 CHESTERTOWN MD 21620	CHESTERTOWN	21620
CHESTERTOWN CARDIOLOGY LLC	120 SPEER RD SUITE 2 CHESTERTOWN MD 21620	CHESTERTOWN	21620
BRAYTON NEIL W DDS	122 SPEER RD SUITE 1 CHESTERTOWN MD 21620	CHESTERTOWN	21620
LABORATORY CORPORATION OF AMERICA	501 E CAMPUS AVE CHESTERTOWN MD 21620	CHESTERTOWN	21620
HERON POINT OF	501 E CAMPUS AVE	CHESTERTOWN	21620

CHESTERTOWN	CHESTERTOWN MD 21620		
DR ROBERT SCHREIBER	125 DIXON DR CHESTERTOWN MD 21620	CHESTERTOWN	21620
CHESTERTOWN CHIROPRACTIC CENTER	103 DIXON DR CHESTERTOWN MD 21620	CHESTERTOWN	21620
FANNING PATRICIA A DC	103 DIXON DR CHESTERTOWN MD 21620	CHESTERTOWN	21620
LIVING AT HOME HEALTH SERVICES LLC	100 N CROSS ST CHESTERTOWN MD 21620	CHESTERTOWN	21620
WYMAN FREDERICK N	111 SPRING AVE CHESTERTOWN MD 21620	CHESTERTOWN	21620
FEEL FLEX AND FLOW	9607 FLATLAND RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
D'S PLACE	25000 LAMBS MEADOW RD WORTON MD 21678	WORTON	21678
BOWMAN THOMAS DR	10395 RILEYS MILL RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
WALKER'S CARE HOME	11034 KRISTEN WAY WORTON MD 21678	WORTON	21678
KNUTSON DAVID W MD	22460 FAIRGALE FARM LN CHESTERTOWN MD 21620	CHESTERTOWN	21620
THOMAS VELOTTI DPM	932 WASHINGTON AVE CHESTERTOWN MD 21620	CHESTERTOWN	21620
EASTERN SHORE FAMILY FOOT CARE	970 WASHINGTON AVE CHESTERTOWN MD 21620	CHESTERTOWN	21620
ZAKS ARNOLD E DR ORTHODNTST	970 WASHINGTON AVE CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT CENTER, INC	105 NORTHGATE DR CHESTERTOWN MD 21620	CHESTERTOWN	21620
CROSSROADS COMMUNITY, INC.	937 GATEWAY DR CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT CENTER, INC	1002 TWIN CT CHESTERTOWN MD 21620	CHESTERTOWN	21620
PLAN B COMM MD	26588 LAMBS MEADOW RD WORTON MD 21678	WORTON	21678
OUR HOME IN THE COUNTRY	12617 STILL POND CREEK RD WORTON MD 21678	WORTON	21678
OUR HOME IN THE COUNTRY (2) LLC	25667 W HILL RD WORTON MD 21678	WORTON	21678
DONAHER PAUL	119 N MAIN ST GALENA MD 21635	GALENA	21635
PHYSIO THERAPY ASSOCIATES	119 N MAIN ST GALENA MD 21635	GALENA	21635
CHESTER RIVER PRIMARY CARE	119 N MAIN ST SUITE C GALENA MD 21635	GALENA	21635
PECK ALAN H MD	24110 KINNARDS POINT DR WORTON MD 21678	WORTON	21678
MY ABODE	25535 STILL POND NECK RD WORTON MD 21678	WORTON	21678
MY ABODE 2	25551 STILL POND NECK RD WORTON MD 21678	WORTON	21678
KENT CENTER, INC	112 ASHWOOD LN GALENA MD 21651	GALENA	21651
STOUT JOSEPH J & JOANNA DR	29341 GLENCOE RD KENNEDYVILLE MD 21645	KENNEDYVILLE	21645

KENT CENTER, INC	416 GREENWOOD AVE CHESTERTOWN MD 21610	CHESTERTOWN	21610
YMCA, CAMP TOCKWOGH	24370 STILL POND NECK RD WORTON MD 21678	WORTON	21678

Table 36: Kent County Public Safety Anchor Institutions

Anchor Institution Name	Address	City	Zip Code
KENT COUNTY BACKUP 911 CENTER	709 MORGNEC RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT COUNTY 911 CENTER	104 VICKERS DR CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT COUNTY COURT HOUSE	103 NORTH CROSS ST. CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT COUNTY STATES ATTORNEY	103 CHURCH ALLEY CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT COUNTY EMERGENCY MEDICAL SERVICES	11528 LYNCH ROAD WORTON MD 21678	WORTON	21678
KENT COUNTY BACKUP 911 CENTER / DATA CENTER	400 HIGH ST. CHETERTOWN MD 21620	CHESTERTOWN	21620
MSP - CHESTER	101 DIXON DR CHESTERTOWN MD 21620	CHESTERTOWN	21620

Table 37: Kent County Higher Education Anchor Institutions

Anchor Institution Name	Address	City	Zip Code
WASHINGTON COLLEGE	300 WASHINGTON AVE CHESTERTOWN MD 21620	CHESTERTOWN	21620
SHA CHESTERTOWN D2	615 MORGNEC RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
SHA DISTRICT 2 HEADQUARTERS	615 MORGNEC RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
KENT COUNTY EOC	104 VICKERS DR CHESTERTOWN MD 21620	CHESTERTOWN	21620
MILLINGTON WMA	33626 MARYLAND LINE RD MASSEY MD 21650	MASSEY	21650
KENT COUNTY PARKS AND RECREATION	11041 WORTON ROAD	WORTON	21678
KENT SOIL CONSERVATION DISTRICT	122 SPEER RD CHESTERTOWN MD 21620	CHESTERTOWN	21620

Table 38: Queen Anne's County Schools K-12 Anchor Institutions

Anchor Institution Name	Address	City	Zip Code
SUDLERSVILLE MIDDLE SCHOOL 2012	600 CHARLES ST SUDLERSVILLE MD 21668	SUDLERSVILLE	21668
MATAPEAKE MIDDLE SCHOOL	671 ROMANCOKE RD STEVENSVILLE MD 21666	STEVENSVILLE	21666
MATAPEAKE ELEMENTARY SCHOOL	651 ROMANCOKE RD STEVENSVILLE MD	STEVENSVILLE	21666

	21666		
GRASONVILLE ELEMENTARY SCHOOL	5435 MAIN ST GRASONVILLE MD 21638	GRASONVILLE	21638
CHURCH HILL ELEMENTARY SCHOOL	631 MAIN ST CHURCH HILL MD 21623	CHURCH HILL	21623
KENT ISLAND ELEMENTARY SCHOOL	110 ELEMENTARY WAY STEVENSVILLE MD 21666	STEVENSVILLE	21666
BAYSIDE ELEMENTARY SCHOOL	301 CHURCH ST STEVENSVILLE MD 21666	STEVENSVILLE	21666
SUDLERSVILLE ELEMENTARY SCHOOL	300 S CHURCH ST SUDLERSVILLE MD 21668	SUDLERSVILLE	21668
STEVENSVILLE MIDDLE SCHOOL	610 MAIN ST STEVENSVILLE MD 21666	STEVENSVILLE	21666
KENT ISLAND HIGH SCHOOL	900 LOVE POINT RD STEVENSVILLE MD 21666	STEVENSVILLE	21666
GUNSTON DAY SCHOOL	911 GUNSTON RD CENTREVILLE MD 21617	CENTREVILLE	21617
QUEEN ANNE HIGH SCHOOL	125 RUTHSBURG RD CENTREVILLE MD 21617	CENTREVILLE	21617
CENTREVILLE MIDDLE SCHOOL	231 RUTHSBURG RD CENTREVILLE MD 21617	CENTREVILLE	21617
CENTREVILLE ELEMENTARY SCHOOL	213 HOMEWOOD AVE CENTREVILLE MD 21617	CENTREVILLE	21617
KENNARD ELEMENTARY SCHOOL	410 LITTLE KIDWELL AVE CENTREVILLE MD 21617	CENTREVILLE	21617

Table 39: Queen Anne's County Library Anchor Institutions

Anchor Institution Name	Address	City	Zip Code
CENTREVILLE LIBRARY	121 S COMMERCE ST CENTREVILLE MD 21617	CENTREVILLE	21617
KENT ISLAND LIBRARY	200 LIBRARY CIR STEVENSVILLE MD 21666	STEVENSVILLE	21666
SUDLERSVILLE LIBRARY	105 W MAIN ST SUDLERSVILLE MD 21668	SUDLERSVILLE	21668

Table 40: Queen Anne's County Healthcare Anchor Institutions

Anchor Institution Name	Address	City	Zip Code
SHORE HEALTH SYSTEM	2540 CENTREVILLE RD CENTREVILLE MD 21617	CENTREVILLE	21617
SHORE HEALTH SYSTEM	146 COURSEVALL DR CENTREVILLE MD 21617	CENTREVILLE	21617
HOSPICE OF QUEEN ANNE'S	255 COMET DR CENTREVILLE MD 21617	CENTREVILLE	21617
CHESTER RIVER HOME CARE & HOSPICE	6602 CHURCH HILL RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
ONSITE HEALTHCARE SERVICE INC	210 PIER 1 RD STEVENSVILLE MD 21666	STEVENSVILLE	21666
CORSICA RIVER MENTAL HEALTH	120 BANJO LN CENTREVILLE MD 21617	CENTREVILLE	21617
CROSSROADS COMMUNITY INC	120 BANJO LN CENTREVILLE MD 21617	CENTREVILLE	21617
GENESIS HEALTHCARE	205 ARMSTRONG ST CENTREVILLE MD 21617	CENTREVILLE	21617
QUEEN ANNE'S MEDICAL CENTER	2108 DIDONATO DR CHESTER MD 21619	CHESTER	21619
RAINEYDAZE HOMECARE AGENCY	135 COLLIER RD GRASONVILLE MD 21638	GRASONVILLE	21638
CHESTER RIVER HOSPITAL CENTER	105 BROWN ST CENTREVILLE MD 21617	CENTREVILLE	21617
KRUCOFF MORRIS DR	106 BAY DR STEVENSVILLE MD 21666	STEVENSVILLE	21666
TUCKAHOE CHIROPRACTIC	32201 QUEEN ANNE HWY QUEEN ANNE MD 21657	QUEEN ANNE	21657
CHESTERWYE CENTER, INC	117 GREENWOOD RD QUEENSTOWN MD 21658	QUEENSTOWN	21658
CHESTERWYE CENTER, INC	1322 PERRY CORNER RD GRASONVILLE MD 21638	GRASONVILLE	21638
SOUTH RIVER PEDIATRICS	2 CHESTER PLZ CHESTER MD 21619	CHESTER	21619
CHAS S KAROSKY	230 EARECKSON LN STEVENSVILLE MD 21666	STEVENSVILLE	21666
VAN HORN J L DVM PA	509 BUCKINGHAM DR STEVENSVILLE MD 21666	STEVENSVILLE	21666
AUFDERHEIDE SARAH DDS PA	202 SAINT CLAIRE PL STEVENSVILLE MD 21666	STEVENSVILLE	21666
PHILBIN PHILIP A DDS	101 SAINT CLAIRE PL SUITE 104 STEVENSVILLE MD 21666	STEVENSVILLE	21666
BAYSIDE DENTAL	208 SAINT CLAIRE PL STEVENSVILLE MD 21666	STEVENSVILLE	21666
DUDLEY KATZ DDS PC INC	101 SAINT CLAIRE PL SUITE 102 STEVENSVILLE MD 21666	STEVENSVILLE	21666
PHYSICIANS MBMNT GRP LL	115 SALLITT DR STEVENSVILLE MD 21666	STEVENSVILLE	21666
CHESAPEAKE LASER	115 SALLITT DR SUITE A STEVENSVILLE MD 21666	STEVENSVILLE	21666

MARYLAND PRIMARY CARE	115 SALLITT DR SUITE E STEVENSVILLE MD 21666	STEVENSVILLE	21666
BEALS PAUL V	120 SALLITT DR STEVENSVILLE MD 21666	STEVENSVILLE	21666
THE WATER'S EDGE	155 SALLITT DR STEVENSVILLE MD 21666	STEVENSVILLE	21666
WALZER & SULLIVAN DDS	102 SAINT CLAIRE PL SUITE 100 STEVENSVILLE MD 21666	STEVENSVILLE	21666
DUDLEY KATZ DDS PC INC	102 SAINT CLAIRE PL SUITE 102 STEVENSVILLE MD 21666	STEVENSVILLE	21666
BALANCE THERAPEUTICS LLC	102 SAINT CLAIRE PL SUITE 202 STEVENSVILLE MD 21666	STEVENSVILLE	21666
CHESTERWYE CENTER, INC	436 CEMETERY RD GRASONVILLE MD 21638	GRASONVILLE	21638
CHESTERWYE CENTER, INC	110 CHESTERWYE LN GRASONVILLE MD 21638	GRASONVILLE	21638
CHESTERWYE CENTER, INC	111 CHESTERWYE LN GRASONVILLE MD 21638	GRASONVILLE	21638
CHESTERWYE CENTER, INC	115 CHESTERWYE LN GRASONVILLE MD 21638	GRASONVILLE	21638
MCDONALD CHARLES I DR	130 KENT LNDG STEVENSVILLE MD 21666	STEVENSVILLE	21666
ONSITE HEALTHCARE SERVICE INC	210 PIER 1 RD STEVENSVILLE MD 21666	STEVENSVILLE	21666
HEARTLAND HOUSE	113 PERRYS CORNER RD GRASONVILLE MD 21638	GRASONVILLE	21638
CHESAPEAKE BAY PSYCHOLOGICAL SERVICES	100 HELFEN BEIN LN CHESTER MD 21619	CHESTER	21619
BILLINGS SCOTT H DDS	22 KENT TOWN MARKET CHESTER MD 21619	CHESTER	21619
SIMONCINI VICENTE DR	374 THOMPSON CREEK MALL STEVENSVILLE MD 21666	STEVENSVILLE	21666
MANDELL CHIROPRACTIC WELLNESS CENTER	711 MAIN ST STEVENSVILLE MD 21666	STEVENSVILLE	21666
QUEEN ANNE'S COUNTY HEALTH DEPARTMENT ALCOHOL AND DRUG ABUSE SERVICES	210 WHITE PINE LN STEVENSVILLE MD 21666	STEVENSVILLE	21666
CHILDRENS CHOICE	1103 BUTTERWORTH CT STEVENSVILLE MD 21666	STEVENSVILLE	21666
AN OUNCE OF PREVENTION LLC	440 MAIN ST STEVENSVILLE MD 21666	STEVENSVILLE	21666
LABORATORY CORPORATION OF AMERICA	130 LOVE POINT RD SUITE 103 STEVENSVILLE MD 21666	STEVENSVILLE	21666
COOPERMAN RICHARD W DPM PA	130 LOVE POINT RD SUITE 105 STEVENSVILLE MD 21666	STEVENSVILLE	21666
CANE LAURENCE DPM	130 LOVE POINT RD SUITE 102 STEVENSVILLE MD 21666	STEVENSVILLE	21666

CHESTERWYE CENTER, INC	101 MAPLE DR GRASONVILLE MD 21638	GRASONVILLE	21638
PHOENIX DIAGNOSTIC LABORATORY	800 ISLAND PROFESSIONAL PARK ST STEVENSVILLE MD 21666	STEVENSVILLE	21666
KAHAN BRIAN S DOPA	1630 MAIN ST MD 21619	CHESTER	21619
ANNE ARUNDEL DIAGNOSTICS IMAGING	1630 MAIN ST SUITE 104 CHESTER MD 21619	CHESTER	21619
BAY AREA ORTHOPAEDICS AND SPORTS MEDICINE	1630 MAIN ST SUITE 108 CHESTER MD 21619	CHESTER	21619
ANNAPOLIS DERMATOLOGY ASSOCIATES	1630 MAIN ST SUITE 109 CHESTER MD 21619	CHESTER	21619
PERET & MOY THERAPY ASSOCIATES LLC	1630 MAIN ST SUITE 110 CHESTER MD 21619	CHESTER	21619
ANNAPOLIS PEDIATRICS	1630 MAIN ST SUITE 201 CHESTER MD 21619	CHESTER	21619
HEALTH CARE ENTERPRISES	1630 MAIN ST SUITE 204 CHESTER MD 21619	CHESTER	21619
CARDIOLOGY ASSOC	1630 MAIN ST SUITE 208 CHESTER MD 21619	CHESTER	21619
WATT DAVID R	1630 MAIN ST SUITE 210 CHESTER MD 21619	CHESTER	21619
ANNAPOLIS OB GYN ASSOCIATES	1630 MAIN ST SUITE 211 CHESTER MD 21619	CHESTER	21619
ADVANCED PAIN MANAGEMENT	1630 MAIN ST SUITE 213 CHESTER MD 21619	CHESTER	21619
QUEEN ANNE EMERGENCY CENTER	115 SHOREWAY DR QUEENSTOWN MD 21658	QUEENSTOWN	21658
CHESTERWYE CENTER, INC	906 CHESAPEAKE DR STEVENSVILLE MD 21666	STEVENSVILLE	21666
KENT ISLAND DENTISTRY LLC	1231 SHOPPING CENTER RD STEVENSVILLE MD 21666	STEVENSVILLE	21666
CHESAPEAKE DENTAL	116 S PINEY RD SUITE 202 CHESTER MD 21619	CHESTER	21619
KENT ISLAND CHIROPRACTIC AND REHABILITATION	116 S PINEY RD SUITE 110 CHESTER MD 21619	CHESTER	21619
QUEST DIAGNOSTICS	2112 DIDONATO DR CHESTER MD 21619	CHESTER	21619
ANNE ARUNDEL DIAGNOSTICS INC	2108 DIDONATO DR CHESTER MD 21619	CHESTER	21619
EASTERN SHORE FAMILY FOOT CARE	2108 DIDONATO DR CHESTER MD 21619	CHESTER	21619
KENT ISLAND CHIROPRACTOR	2108 DIDONATO DR CHESTER MD 21619	CHESTER	21619
QUEEN ANNE'S MEDICAL CENTER	2108 DIDONATO DR CHESTER MD 21619	CHESTER	21619
QUEENSTOWN EMS	7110 MAIN ST.	QUEENSTOWN	21658
KENT ISLAND EMS	103 DAVIDSON DRIVE	STEVENSVILLE	21666
CHHAY HONICK PICHADA DDS PA	1617 POSTAL RD MD 21619	CHESTER	21619
WOLFE WILLIAM F III DDS PA	2009 MAIN ST CHESTER	CHESTER	21619

	MD 21619				
QUEENSTOWN BANK OD MARYLAND BE	101 E MAIN ST STEVENSVILLE MD 21666	STEVENSVILLE	21666		
WAKEFIELD PHYSICAL THERAPY LLC	416 TIMBER LN GRASONVILLE MD 21638	GRASONVILLE	21638		
CHESTERWYE CENTER, INC	116 GRAVEL RUN RD GRASONVILLE MD 21638	GRASONVILLE	21638		
RAINEYDAZE HOMECARE AGENCY	135 COLLIER RD GRASONVILLE MD 21638	GRASONVILLE	21638		
CHESTERWYE CENTER, INC	112 GRAVEL RUN RD GRASONVILLE MD 21638	GRASONVILLE	21638		
MINK HILL HOME, INC.	112 COLLIER RD GRASONVILLE MD 21638	GRASONVILLE	21638		
CHESAPEAKE DENTAL	313 WINCHESTER CREEK RD GRASONVILLE MD 21638	GRASONVILLE	21638		
BAY SURGERY CENTER, - KENT ISLAND, LLC	120 SALLIT DR STEVENSVILLE MD 21666	STEVENSVILLE	21666		
ANNE ARUNDEL COUNSELING, INC.	115 SALLITT DR STEVENSVILLE MD 21666	STEVENSVILLE	21666		
HAMMER EDWARD C DR	105 4H PARK RD QUEENSTOWN MD 21658	QUEENSTOWN	21658		
DRS	101 LOG CANOE CIR STEVENSVILLE MD 21666	STEVENSVILLE	21666		
SCHWARTZ STEVEN P DR	101 LOG CANOE CIR SUITE E STEVENSVILLE MD 21666	STEVENSVILLE	21666		
HENDRIXSON LINDA	133 LOG CANOE CIR STEVENSVILLE MD 21666	STEVENSVILLE	21666		
BENOIT MARILYN M D	141 LOG CANOE CIR STEVENSVILLE MD 21666	STEVENSVILLE	21666		
GALE TUCKER LCSW-C	143 LOG CANOE CIR STEVENSVILLE MD 21666	STEVENSVILLE	21666		
KALLIONGIS D JAMES MD	165 LOG CANOE CIR SUITE E STEVENSVILLE MD 21666	STEVENSVILLE	21666		
KENT ISLAND CHIROPRACTIC DR STEPHEN ERLE DR COLLIN	165 LOG CANOE CIR SUITE D STEVENSVILLE MD 21666	STEVENSVILLE	21666		
BAYSIDE PHYSICAL THERAPY & SPORTS REHAB	155 LOG CANOE CIR STEVENSVILLE MD 21666	STEVENSVILLE	21666		
KENT ISLAND ADULT DAY MEDICAL CENTER	891 LOVE POINT RD STEVENSVILLE MD 21666	STEVENSVILLE	21666		
LEVEL 3 COMMUNICATIONS MD	202 ACKERMAN RD STEVENSVILLE MD 21666	STEVENSVILLE	21666		
GILLIN JOY DDS	802 PETINOT PL STEVENSVILLE MD 21666	STEVENSVILLE	21666		
FOR ALL SEASONS, INC.-SATELLITE	206 DEL RHODES AVE QUEENSTOWN MD 21685	QUEENSTOWN	21685		
ARCADIA ASSISTED LIVING LLC	402 CASTLE MARINA DR CHESTER MD 21619	CHESTER	21619		
COHEN CHIROPRACTICE CENTREVILLE	423 RAILROAD AVE CENTREVILLE MD 21617	CENTREVILLE	21617		
CROSSROADS COMMUNITY, INC.	302 WATER ST CENTREVILLE	CENTREVILLE	21617		

	CENTREVILLE MD 21617			
SHORE CLINICAL FOUNDATION	2540 CENTREVILLE RD CENTREVILLE MD 21617	CENTREVILLE		21617
SHORE FAMILY PRACTICE	2540 CENTREVILLE RD CENTREVILLE MD 21617	CENTREVILLE		21617
SHORE HEALTH SYSTEM	2540 CENTREVILLE RD CENTREVILLE MD 21617	CENTREVILLE		21617
HOSPICE OF QUEEN ANNE'S, INC.	255 COMET DR CENTREVILLE, MD 21617	CENTREVILLE		21617
JOHN W SERINO DDS	202 COURSEVALL DR CENTREVILLE MD 21617	CENTREVILLE		21617
CENTREVILLE FAMILY MEDICINE	202 COURSEVALL DR SUITE 101 CENTREVILLE MD 21617	CENTREVILLE		21617
CORSICA WOMEN'S HEALTH	202 COURSEVALL DR SUITE 107 CENTREVILLE MD 21617	CENTREVILLE		21617
BAYSIDE PHYSICAL THERAPY & SPORTS REHAB	202 COURSEVALL DR SUITE 111 CENTREVILLE MD 21617	CENTREVILLE		21617
JAMES J LUCAS DDS & WOLFGANG MANSSURY DDS	134 COURSEVALL DR CENTREVILLE MD 21617	CENTREVILLE		21617
SHORE HEALTH SYSTEM	146 COURSEVALL DR CENTREVILLE MD 21617	CENTREVILLE		21617
DELMARVA FAMILY RESOURCES	142 COURSEVAL DR CENTREVILLE MD 21617	CENTREVILLE		21617
CORSICA RIVER MENTAL HEALTH SCVS., INC.	120 BANJO LN CENTREVILLE MD 21617	CENTREVILLE		21617
CROSSROADS COMMUNITY, INC.	120 BANJO LN CENTREVILLE MD 21617	CENTREVILLE		21617
CROSSROADS COMMUNITY, INC.	300 HOLLY ST CENTREVILLE MD 21676	CENTREVILLE		21676
CERTIFIED COUNSELING SERVICES OF CENTREVILLE	204 BANJO LN CENTREVILLE MD 21617	CENTREVILLE		21617
CROSSROADS, INC.	30 CENTER PARK CENTREVILLE MD 21617	CENTREVILLE		21617
MAXWELL GEORGE DR	401 CORSICA NECK RD CENTREVILLE MD 21617	CENTREVILLE		21617
ALLERGY & ASTHMA CARE	227 N LIBERTY ST CENTREVILLE MD 21617	CENTREVILLE		21617
DOWNS THOMAS H DDS	100 PENNSYLVANIA AVE CENTREVILLE MD 21617	CENTREVILLE		21617
CROSSROADS COMMUNITY, INC.	110 HAPPY LADY LN CHESTERTOWN MD 21617	CHESTERTOWN		21617
QUEEN ANNE'S COUNTY DEPARTMENT OF HEALTH / ALCOHOL AND DRUG ABUSE SERVICES	205 N LIBERTY ST CENTREVILLE MD 21617	CENTREVILLE		21617
CORSICA HILLS CENTER	205 ARMSTRONG AVE CENTREVILLE MD 21617	CENTREVILLE		21617
TIDEWATER PHYSICAL THERAPY & REHABILITATION ASSOCI	132 N COMMERCE ST CENTREVILLE MD 21617	CENTREVILLE		21617
QUEEN ANNE'S COUNTY DEPARTMENT OF HEALTH	206 N COMMERCE ST CENTREVILLE MD 21617	CENTREVILLE		21617
CHESAPEAKE CARDIOLOGY CLINIC	420 PENNSYLVANIA AVE CENTREVILLE	CENTREVILLE		21617

	CENTREVILLE MD 21617		
RAMIREZ JULIO A MD PC	218 PENNSYLVANIA AVE CENTREVILLE MD 21617	CENTREVILLE	21617
CIGANEK ERIC MD	629 RAILROAD AVE CENTREVILLE MD 21617	CENTREVILLE	21617
CHESTER RIVER HOSPITAL CENTER	105 BROWN ST CENTREVILLE MD 21617	CENTREVILLE	21617
RIVA TERRACE OF CHURCH HILL	222 WALNUT ST CHURCH HILL MD 21623	CHURCH HILL	21623
SHORE COMPREHENSIVE UROLOGY	6602 CHURCH HILL RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
QUEST DIAGNOSTICS	6602 CHURCH HILL RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
BAY HEMATOLOGY/ONCOLOGY PA	6602 CHURCH HILL RD SUITE 100 CHESTERTOWN MD 21620	CHESTERTOWN	21620
DAVID H SMITH MD	6602 CHURCH HILL RD SUITE 300 CHESTERTOWN MD 21620	CHESTERTOWN	21620
RAMIREZ JULIO A MD PC	6602 CHURCH HILL RD SUITE 400 CHESTERTOWN MD 21620	CHESTERTOWN	21620
CHEASAPEAKE MEDICAL IMAGING	6602 CHURCH HILL RD SUITE 150 CHESTERTOWN MD 21620	CHESTERTOWN	21620
CHESTERTOWN FAMILY MEDICINE PA	6602 CHURCH HILL RD SUITE 200 CHESTERTOWN MD 21620	CHESTERTOWN	21620
CHESTER RIVER LAB SERVICES	6602 CHURCH HILL RD SUITE 450 CHESTERTOWN MD 21620	CHESTERTOWN	21620
CROSSROADS, INC.	100 FARWELL AVE CHESTERTOWN MD 21620	CHESTERTOWN	21620
SAFE HAVEN MANOR	102 CHARLES ST SUDLERSVILLE MD 21668	SUDLERSVILLE	21668
SHANAHAN P J DR	516 PEAR TREE POINT RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
CHESTER RIVER HOME CARE & HOSPICE, LLC	6602 CHURCH HILL RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
BRAXTON JOHN S MD	338 ROLPHS WHARF RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
CROSSROADS COMMUNITY	205 OLD BRIDGE RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
SIEFFERT WILLIAM J DDS	7416 CHURCH HILL RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
ACUPUNCTURE CENTER	311 ROSIN DR CHESTERTOWN MD 21620	CHESTERTOWN	21620
BRAYTON NEIL W DDS	141 BRAYTON LN CHESTERTOWN MD 21620	CHESTERTOWN	21620
TALBOT DERMATOLOGY & DERMATOLOGIC SURGERY	6412 CHURCH HILL RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
HENDRIX THOMAS DR	204 RIVER RD CHESTERTOWN MD 21620	CHESTERTOWN	21620
KINGSBURY ROBERT DR	226 LAKESIDE DR	MILLINGTON	21651

	MILLINGTON MD 21651			
FOXXTOWN SENIOR CENTER	601 FOXXTOWN DR SUDLERSVILLE MD 21668	SUDLERSVILLE	21668	
CENTREVILLE AGING	104 POWELL ST CENTREVILLE MD 21617	CENTREVILLE	21617	
PERCY THOMAS SENIOR CENTER/TERRAPIN GROVE	891 LOVE POINT RD STEVENSVILLE MD 21666	STEVENSVILLE	21666	
MOUNTAIN ROAD AIRPORT	107 KIRWAN'S LANDING LN CHESTER MD 21619	CHESTER	21619	
GRASONVILLE SENIOR CENTER	4802 MAIN ST GRASONVILLE MD 21638	GRASONVILLE	21638	

Table 41: Queen Anne's County Public Safety Anchor Institutions

Anchor Institution Name	Address	City	Zip Code	
SHERIFF'S DEPARTMENT	505 RAILROAD AVE CENTREVILLE MD 21617	CENTREVILLE	21617	
TASK FORCE	401 HARPER RD CENTREVILLE MD 21617	CENTREVILLE	21617	
KENT ISLAND EMS	103 DAVIDSON DR SUDLERSVILLE MD 21666	SUDLERSVILLE	21666	
NORTH EMS	200 S CHURCH ST	SUDLERSVILLE	21668	
CENTREVILLE EMS	302 SAFETY DRIVE	CENTREVILLE	21617	
CENTREVILLE POLICE	420 N COMMERCE ST CENTREVILLE MD 21617	CENTREVILLE	21617	
DETENTION CENTER	500 LITTLE HUT DR CENTREVILLE MD 21617	CENTREVILLE	21617	
SOUTH EMS	101 MEDIC DR CHESTER MD 21619	CHESTER	21619	
DEPARTMENT OF EMERGENCY SERVICES	100 COMMUNICATIONS DR CENTREVILLE MD 21617	CENTREVILLE	21617	
MARYLAND STATE POLICE TROOP S	311 SAFETY DR CENTREVILLE MD 21617	CENTREVILLE	21617	
OFFICE OF TOURISM/KENT NARROWS SHERIFF'S SUBSTATION	425 PINEY NARROWS RD CHESTER MD 21619	CHESTER	21619	

Table 42: Queen Anne's County Higher Education Anchor Institutions

Anchor Institution Name	Address	City	Zip Code	
CHESAPEAKE COLLEGE	1000 COLLEGE CIR WYE MILLS MD 21658	WYE MILLS	21658	
UNIVERSITY OF MARYLAND - WYE INSTITUTE (COLLEGE OF AG & NATURAL RESOURCES)	HOUGHTON LAB LN QUEENSTOWN MD 21658	QUEENSTOWN	21658	

Table 43: Queen Anne's County Community Support Anchor Institutions

Anchor Institution Name	Address	City	Zip Code	
BOARD OF EDUCATION	202 CHESTERFIELD AVE CENTREVILLE MD 21617	CENTREVILLE	21617	

PLANNING AND ZONING (QAC)	160 COURSEVALL DR CENTREVILLE MD 21617	CENTREVILLE	21617
WYE ISLAND NRMA	632 WYE ISLAND RD QUEENSTOWN MD 21658	QUEENSTOWN	21658
BAY BRIDGE AIRPORT	202 AIRPORT RD STEVENSVILLE MD 21666	STEVENSVILLE	21666
SANITARY BUILDING	310 BATEAU DR STEVENSVILLE MD 21666	STEVENSVILLE	21666
NRP HILLSBORO BARRACK	3001 STARRR RD ANNE MD 21657	QUEEN ANNE	21657
QUEEN ANNE'S SOIL CONSERVATION DISTRICT	211 E WATER ST CENTREVILLE MD 21617	CENTREVILLE	21617
MATAPEAKE TERMINAL	301 MARINE ACADEMY DR STEVENSVILLE MD 21666	STEVENSVILLE	21666
HEALTH SERVICES	210 WHITE PINE LN STEVENSVILLE MD 21666	STEVENSVILLE	21666
NORTH EMS	200 S CHURCH ST SUDLERSVILLE MD 21668	SUDLERSVILLE	21668
ANIMAL CONTROL	201 CLAY DR QUEENSTOWN MD 21658	QUEENSTOWN	21658
PARKS AND RECREATION	1945 4 H PARK RD CENTREVILLE MD 21617	CENTREVILLE	21617
BOE WAREHOUSE	305 RUTHSBURG RD CENTREVILLE MD 21617	CENTREVILLE	21617
SHA CENTREVILLE	111 SAFETY DR CENTREVILLE MD 21617	CENTREVILLE	21617
PUBLIC WORKS	312 SAFETY DR CENTREVILLE MD 21617	CENTREVILLE	21617
ANIMAL HEALTH LAB CENTREVILLE	211 SAFETY DR CENTREVILLE MD 21617	CENTREVILLE	21617
DMSB BARRACK S - CENTREVILLE	311 SAFETY DR CENTREVILLE MD 21617	CENTREVILLE	21617
WATER TREATMENT PLANT	208 CHURCH ST STEVENSVILLE MD 21666	STEVENSVILLE	21666
PLUMBING BOARD	205 N LIBERTY ST CENTREVILLE MD 21617	CENTREVILLE	21617
DOWNES BUILDING	206 S COMMERCE ST CENTREVILLE MD 21617	CENTREVILLE	21617
DEPARTMENT OF PLANNING (MDP)	120 BROADWAY AVE CENTREVILLE MD 21617	CENTREVILLE	21617
CENTREVILLE EAST - CENTRAL REGIONAL SERVICE CENTER -	120 BROADWAY AVE CENTREVILLE MD 21617	CENTREVILLE	21617
MDE WASTE MANAGEMENT FIELD OFFICE	120 BROADWAY AVE CENTREVILLE MD 21617	CENTREVILLE	21617
LIBERTY BUILDING	107 N LIBERTY ST CENTREVILLE MD 21617	CENTREVILLE	21617
UNICORN LAKE FISH HATCHERY	110 FISHING LAKE LN MILLINGTON MD 21651	MILLINGTON	21651
BLUE HERON GOLF COURSE	3270 ROMANCOKE RD STEVENSVILLE MD 21666	STEVENSVILLE	21666
STATE'S ATTORNEYS OFFICE	136 N COMMERCE ST CENTREVILLE MD 21617	CENTREVILLE	21617

HEALTH DEPARTMENT		206 N COMMERCE ST CENTREVILLE MD 21617	CENTREVILLE	21617
CENTREVILLE TREATMENT PLANT	WASTEWATER	116 JOHNSTOWN LANE	CENTREVILLE	21617
CENTREVILLE TOWN HALL		101 LAWYERS ROW	CENTREVILLE	21617

Table 44: Caroline County School K-12 Anchor Institutions

Caroline County School Anchor Institutions				
Anchor Institution Name		Address	City	Zip Code
PRESTON ELEMENTARY SCHOOL		225 MAIN ST MD 21655	PRESTON	21655
GREENSBORO ELEMENTARY SCHOOL		625 N MAIN ST GREENSBORO MD 21639	GREENSBORO	21639
THE BENEDICTINE SCHOOL		14299 BENEDICTINE LANE RIDGELY MD 21660	RIDGELY	21660
RIDGELY ELEMENTARY SCHOOL		118 N CENTRAL AVE RIDGELY MD 21660	RIDGELY	21660
DENTON ELEMENTARY SCHOOL		303 SHARP RD MD 21629	DENTON	21629
FEDERALSBURG ELEMENTARY SCHOOL		302 S UNIVERSITY AVE FEDERALSBURG MD 21632	FEDERALSBURG	21632
CAROLINE CAREER & TECHNOLOGY CENTER		10855 CENTRAL AVE RIDGELY MD 21660	RIDGELY	21660
NORTH CAROLINE HIGH SCHOOL		10990 RIVER RD MD 21660	RIDGELY	21660
COLONEL RICHARDSON HIGH SCHOOL		25320 RICHARDSON RD FEDERALSBURG MD 21632	FEDERALSBURG	21632
COLONEL RICHARDSON MIDDLE SCHOOL		25390 RICHARDSON RD FEDERALSBURG MD 21632	FEDERALSBURG	21632
CAROLINE COUNTY PUBLIC SCHOOLS		204 FRANKLIN ST DENTON MD 21629	DENTON	21629
LOCKERMAN MIDDLE SCHOOL		410 LOCKERMAN ST DENTON MD 21629	DENTON	21629

Table 45: Caroline County Library Anchor Institutions

Caroline County Library Anchor Institutions				
Anchor Institution Name		Address	City	Zip Code
FEDERALSBURG BRANCH		123 MORRIS AVE FEDERALSBURG MD 21632	FEDERALSBURG	21632

CENTRAL LIBRARY	100 MARKET ST DENTON MD 21629	DENTON	21629
NORTH COUNTY BRANCH	101 CEDAR LN GREENSBORO MD 21639	GREENSBORO	21639

Table 46: Caroline County Healthcare Anchor Institutions

Caroline County Healthcare Anchor Institutions			
Anchor Institution Name	Address	City	Zip Code
P S I FAMILY SERVICES, INC	506 ACADEMY AVE FEDERALSBURG MD 21632	FEDERALSBURG	21632
DELMARVA COMMUNITY SERVICES, INC	4771 BIRCH DR PRESTON MD 21655	PRESTON	21655
VETERANS HOSPITAL	VETERANS HOSPITAL PERRY POINT MD 21902	PERRY POINT	21902
HAWKINS JOHN W DR DENTIST	319 N MAIN ST FEDERALSBURG MD 21632	FEDERALSBURG	21632
SLOAN JOHN P DDS	112 MORRIS AVE FEDERALSBURG MD 21632	FEDERALSBURG	21632
SENIOR SURROUND CARE	128 CHARLOTTE AVE FEDERALSBURG MD 21632	FEDERALSBURG	21632
FEDERALSBURG MEDICAL CENTER	3304 HAYMAN DR FEDERALSBURG MD 21632	FEDERALSBURG	21632
ALEXANDER TROY A DR	127 BLOOMINGDALE AVE FEDERALSBURG MD 21632	FEDERALSBURG	21632
ATX TELECOMMUNICATIONS MD	215 BLOOMINGDALE AVE FEDERALSBURG MD 21632	FEDERALSBURG	21632
AMAN SOHAIL MD	215 BLOOMINGDALE AVE FEDERALSBURG MD 21632	FEDERALSBURG	21632
CHOPTANK COMMUNITY HEALTH SYSTEM INC	215 BLOOMINGDALE AVE FEDERALSBURG MD 21632	FEDERALSBURG	21632
VANDUSEN FREDERICK DO	215 BLOOMINGDALE AVE FEDERALSBURG MD 21632	FEDERALSBURG	21632
FEDERALSBURG MEDICAL AND DENTAL CENTER	215 BLOOMINGDALE AVE FEDERALSBURG MD 21632	FEDERALSBURG	21632
CAROLINE COUNTY	755 CRYSTAL AVE DENTON MD 21629	DENTON	21629
TAIWO OSUNKOYA DBA TAIWO OSUNKOYA DDS	414 N 6TH ST DENTON MD 21629	DENTON	21629
TIDEWATER PHYSICAL THERAPY &	416 N 6TH ST DENTON MD	DENTON	21629

REHABILITATION ASSOCIATES PA	21629				
CHOPTANK COMMUNITY HEALTH SYSTEM	301 RANDOLPH ST DENTON MD 21629	DENTON			21629
DABREU MICHELLE MD	920 MARKET ST DENTON MD 21629	DENTON			21629
DENTON DIAGNOSTIC CENTER	920 MARKET ST DENTON MD 21629	DENTON			21629
EASTERN SHORE FAMILY FOOTCARE LLC	920 MARKET ST DENTON MD 21629	DENTON			21629
MEMORIAL HOSPITAL REHABILITATION CENTER	920 MARKET ST DENTON MD 21629	DENTON			21629
PULIMOOD KORAH MD	912 MARKET ST DENTON MD 21629	DENTON			21629
DENTON FOOT & ANKLE CENTER	920 MARKET ST DENTON MD 21629	DENTON			21629
DENTON REHAB CENTER	920 MARKET ST DENTON MD 21629	DENTON			21629
SHORE FAMILY PRACTICE DENTON	920 MARKET ST DENTON MD 21629	DENTON			21629
SHORE HEALTH SYSTEM	920 MARKET ST DENTON MD 21629	DENTON			21629
CHOPTANK COMMUNITY HEALTH SYSTEM INC	609 DAFFIN LN DENTON MD 21629	DENTON			21629
CAROLINE CENTER	610 DAFFIN LN DENTON MD 21629	DENTON			21629
DENTON MEDICAL CENTER	609 DAFFIN LN DENTON MD 21629	DENTON			21629
NOVAK SCOTT	505 KERR AVE DENTON MD 21629	DENTON			21629
CHANNEL MARKER	508 KERR AVE DENTON MD 21629	DENTON			21629
CAROLINE NURSING HOME	520 KERR AVE DENTON MD 21629	DENTON			21629
CAROLINE MEDICAL ADULT DAY CARE CENTER	403 S 7TH ST DENTON MD 21629	DENTON			21629
CAROLINE COUNTY HEALTH DEPARTMENT	403 S 7TH ST DENTON MD 21629	DENTON			21629
CAROLINE CENTER	109 S 8TH ST DENTON MD 21629	DENTON			21629
CAROLINE CENTER	109 S 8TH ST DENTON MD 21629	DENTON			21629
FOR ALL SEASONS, INC.-SATELLITE	322 MARKET ST DENTON MD 21629	DENTON			21629
REGIONAL MID SHORE	606 SUNNYSIDE AVE DENTON MD 21629	DENTON			21629
BRANSON LESTER L DR	115 LOU AVE DENTON MD 21629	DENTON			21629
CAROLINE COUNSELING CENTER	104 FRANKLIN ST DENTON MD 21629	DENTON			21629
CAROLINE CENTER	66 VILLAGE CIR DENTON MD 21629	DENTON			21629
BENEDICTINE SCHOOL	7914 LAUREL LN DENTON MD 21629	DENTON			21629

HAVEN HOUSE	8118 HAVEN ST DENTON MD 21629	DENTON	21629
BENEDICTINE SCHOOL	8207 CIRCLE CT DENTON MD 21629	DENTON	21629
BENEDICTINE SCHOOL	8233 LAUREL LN DENTON MD 21629	DENTON	21629
CAROLINE CENTER	8287 HAVEN ST DENTON MD 21629	DENTON	21629
WHEAT GORDON DR & LAURA	200 S 7TH ST DENTON MD 21629	DENTON	21629
TAYLOR MELFA HOUSE	8965 DOUBLE HILLS RD DENTON MD 21629	DENTON	21629
MIDSHORE REGIONAL TMJ DIAGNOSTIC & IMAGING CENTER	10646 RIVER RD DENTON MD 21629	DENTON	21629
SMILES BY HOLSINGER & HIGGINS	10646 RIVER RD DENTON MD 21629	DENTON	21629
WHEAT GORDON F DR CHIRPRCTR	12030 OVERLOOK DR GREENSBORO MD 21639	GREENSBORO	21639
HOMESTEAD MANOR	410 COLONIAL DENTON MD 21629	DR DENTON	21629
HEALTHCARE SERVICES GROUP ATTN	420 COLONIAL DENTON MD 21629	DR DENTON	21629
RUXTON HEALTH CARE	420 COLONIAL DENTON MD 21629	DR DENTON	21629
ENVOY OF DENTON	420 COLONIAL DENTON MD 21629	DR DENTON	21629
D.G. MANOR HOME	12041 CROUSE MILL RD RIDGLEY MD 21660	RIDGLEY	21660
ADJUST FIRST LLC	13 N 6TH ST DENTON MD 21629	DENTON	21629
EASTERN SHORE FAMILY FOOT CARE	510 S 5TH AVE DENTON MD 21629	DENTON	21629
MARK M GOLDBERG DPM DR	510 S 5TH AVE DENTON MD 21629	DENTON	21629
MONAHAN TIMOTHY DR DPM	510 S 5TH AVE DENTON MD 21629	DENTON	21629
CAROLINE HOSPICE FOUNDATION, INC.	613 S 5TH AVE DENTON MD 21629	DENTON	21629
CHANNEL MARKER, INC.	605 S 5TH ST DENTON MD 21629	DENTON	21629
CHANNEL MARKER, INC.	601 S 5TH ST DENTON MD 21629	DENTON	21629
CAROLINE CENTER	12061 SCHOOL ST RIDGELY MD 21660	RIDGELY	21660
CAROLINE CENTER	8164 ARCH DR DENTON MD 21629	DENTON	21629
CHOPTANK COMMUNITY	10990 RIVER RD RIDGELY MD 21660	RIDGELY	21660
BENEDICTINE SCHOOL	11510 REED CIR RIDGELY MD 21660	RIDGELY	21660
TUCKAHOE ANIMAL CLINIC	PO BOX 37 HILLSBORO MD 21641	HILLSBORO	21641
BENEDICTINE SCHOOL	8535 DEER RUN RD DENTON	DENTON	21629

	DENTON MD 21629		
GABLES AT CAROLINE (THE)	701 S 5TH ST DENTON MD 21629	DENTON	21629
CAROLINE CENTER	310 S 4TH ST DENTON MD 21660	DENTON	21660
BENEDICTINE SCHOOL	8510 DEER RUN RD DENTON MD 21629	DENTON	21629
MARYLAND COALITION OF FAMILIES FOR CHILDREN MENTAL HEALTH	317 CARTER AVE DENTON MD 21629	DENTON	21629
SLOAN JOHN P DDS	405 MARKET ST DENTON MD 21629	DENTON	21629
DENTON ORTHODONTICS	601 N 6TH ST DENTON MD 21629	DENTON	21629
CYNTHIA DRAPER & ASSOCIATES	311 FRANKLIN ST DENTON MD 21629	DENTON	21629
BILLMEIER & BRANSON DRS OF OPTOMETRY	320 MARKET ST DENTON MD 21629	DENTON	21629
CAROLINE CENTER	49 VILLAGE CIR DENTON MD 21629	DENTON	21629
PEARSON CARE HOME	717 W SUNSET AVE GREENSBORO MD 21639	GREENSBORO	21639
MCCARTHY JOSEPH H DDS	13155 GREENSBORO RD GREENSBORO MD 21639	GREENSBORO	21639
BENEDICTINE SCHOOL	14299 BENEDICTINE LN RIDGELY MD 21660	RIDGELY	21660
TATEIOMS	14435 CHERRY LN LAUREL MD 20706	LAUREL	20706
GOLDSBORO MEDICAL AND DENTAL CENTER	316 RAILROAD AVE GOLDSBORO MD 21636	GOLDSBORO	21636
BENEDICTINE SCHOOL	15295 WESTBRIDGE CT HENDERSON MD 21640	HENDERSON	21640
BENEDICTINE SCHOOL	15310 WESTBRIDGE CT HENDERSON MD 21640	HENDERSON	21640
BENEDICTINE SCHOOL	23789 WESTBRIDGE DR HENDERSON MD 21640	HENDERSON	21640
MEMORIAL HOSPITAL REHABILITATION CENTER	920 MARKET ST DENTON MD 21629	DENTON	21629
CAROLINE NURSING & REHAB CENTER	520 KERR AVE DENTON MD 21629	DENTON	21629
HOMESTEAD MANOR (ASSISTED LIVING FACILITY)	410 COLONIAL DR DENTON MD 21629	DENTON	21629

Table 47: Caroline County Public Safety Anchor Institutions

Caroline County Public Safety Anchor Institutions			
Anchor Institution Name	Address	City	Zip Code
DEPARTMENT OF EMERGENCY SERVICES	7 NORTH FIRST ST DENTON MD 21629	DENTON	21629
DENTON POLICE DEPT	100 N THIRD ST DENTON MD 21629	DENTON	21629
CAROLINE COUNTY DEPARTMENT	411 FRANKLIN ST	DENTON	21629

OF INFORMATION TECHNOLOGIES	DENTON MD 21629		
FEDERALSBURG VFC - STA 100	208 N UNIVERSITY AVE FEDERALSBURG MD	FEDERALSBURG	21632
FEDERALSBURG POLICE DEPT	204 S MAIN STREET FEDERALSBURG MD 21632	FEDERALSBURG	21632
PRESTON VFC - STA 200	3680 CHOPTANK ROAD PRESTON MD 21655	PRESTON	21655
RIDGELY POLICE DEPT	2 CENTRAL AVE RIDGELY MD 21600	RIDGELY	21600
RIDGELY VFC-STA 400	P.O. Box 425	RIDGELY	21600
GOLDSBORO VFC - STA 700	700 OLD LINE ROAD GOLDSBORO MD 21636	GOLDSBORO	21636
DENTON VFC - STA 300	400 S FIFTH AVE DENTON MD 21629	DENTON	21629
CAROLINE COUNTY SHERIFF'S DEPT	101 GAY ST DENTON MD 21629	DENTON	21629
GREENSBORO VFC - STA 600	116 N MAIN STREET GREENSBORO MD 21639	GREENSBORO	21639
GREENSBORO POLICE DEPT	104 E SUNSET AVE GREENSBORO MD 21639	GREENSBORO	21639

Table 48: Caroline County Community Support Anchor Institutions

Caroline County Community Support Anchor Institutions			
Anchor Institution Name	Address	City	Zip Code
JOHN S. AYTON TREE NURSERY	3424 GALLAGHER RD PRESTON MD 21655	PRESTON	21655
ADKINS ARBORETUM	12610 EVELAND ROAD	RIDGELY	21657
IDYWILD WMA	RT 306 FEDERALSBURG MD 11111	FEDERALSBURG	21632
MARTINAK STATE PARK	137 DEEP SHORE ROAD	DENTON	21629
CAROLINE/TALBOT FORESTRY PROJECT	105 DEEP SHORE RD DENTON MD 21629	DENTON	21629
TUCKAHOE STATE PARK	13070 CROUSE MILL RD QUEEN ANNE MD 21657	RIDGELY	21657
MTA EUTAW OPERATIONS	7 N 1ST ST DENTON MD 21629	DENTON	21629
SHA DENTON	508 CAROLINE ST DENTON MD 21629	DENTON	21629
CAROLINE SOIL CONSERVATION DISTRICT	640 LEGION RD DENTON MD 21629	DENTON	21629

Table 49: Talbot County School K-12 Anchor Institutions

Talbot County School Anchor Institutions			
Anchor Institution Name	Address	City	Zip Code
CHAPEL DISTRICT ELEMENTARY SCHOOL	11430 CORDOVA RD CORDOVA MD 21625	CORDOVA	21625
CHESAPEAKE CHRISTIAN SCHOOL	1009 N WASHINGTON ST EASTON MARYLAND 21601	EASTON	21601
EASTON ELEMENTARY SCHOOL	307 GLENWOOD AVE EASTON MD 21601	EASTON	21601
EASTON HIGH SCHOOL	723 MECKLENBURG AVE EASTON MD 21601	EASTON	21601
EASTON MIDDLE SCHOOL	201 PEACHBLOSSOM RD EASTON MD 21601	EASTON	21601
ST. MICHAELS ELEMENTARY SCHOOL	100 SEYMOUR AVE ST MICHAELS MD 21663	ST MICHAELS	21663
ST. MICHAELS MIDDLE/HIGH SCHOOL	200 SEYMOUR AVE ST MICHAELS MD 21663	ST MICHAELS	21663
ST. PETER AND PAUL SCHOOLS	900 HIGH STREET EASTON MD 21601	EASTON	21601
THE COUNTRY SCHOOL	716 GOLDSBOROUGH STREET EASTON MD 21601	EASTON	21601
TILGHMAN ELEMENTARY SCHOOL	21374 FOSTER AVE TILGHMAN MD 21671	TILGHMAN	21671
WHITE MARSH ELEMENTARY	4322 LOVERS LN TRAPPE MD 21673	TRAPPE	21673

Table 50: Talbot County Library Anchor Institutions

Talbot County Library Anchor Institutions			
Anchor Institution Name	Address	City	Zip Code
ST. MICHAELS BRANCH	106 N FREMONT ST ST MICHAELS MD 21663	ST MICHAELS	21663
TALBOT COUNTY FREE LIBRARY	100 W DOVER ST EASTON MD 21601	EASTON	21601
TILGHMAN BRANCH	21374 FOSTER AVE TILGHMAN MD 21671	TILGHMAN	21671

Table 51: Talbot County Healthcare Anchor Institutions

Talbot County Healthcare Anchor Institutions			
Anchor Institution Name	Address	City	Zip Code
ADVANCED DERMATOLOGY & LASER CENTER	28380 SAINT MICHAELS RD EASTON MD 21601	EASTON	21601
ADVANCED DIALYSIS CENTER - EASTON	610 DUTCHMANS LN EASTON MD 21601	EASTON	21601
ALAND CAROLINE H	8133 ELLIOTT RD SUITE	EASTON	21601

		3 EASTON MD 21601		
ALBRECHT L TODD		8579 COMMERCE DR EASTON SUITE 100A EASTON MD 21601		21601
ALL POSSIBILITIES		14 GLENWOOD AVE EASTON EASTON MD 21601		21601
APRIA HEALTHCARE		29000 INFORMATION LN EASTON EASTON MD 21601		21601
ASKEW REEVE DR		5518 WELLINGTON DR TRAPPE TRAPPE MD 21673		21673
ASKEW REEVE DR		8603 COMMERCE DR EASTON EASTON MD 21601		21601
AUDIOLOGY INCORPORATED	ASSOCIATES	609 DUTCHMANS LN EASTON SUITE D EASTON MD 21601		21601
AUGUSTINE HOME HEALTHCARE		101 BAY ST SUITE 6 EASTON EASTON MD 21601		21601
BAKER L BRADLEY MD		27749 CEDAR POINT RD EASTON EASTON MD 21601		21601
BAUMAN ROBERT C DR		105 W PIER ST OXFORD OXFORD MD 21654		21654
BAUTISTA EFIGENIO L MD		16 GLENWOOD AVE EASTON EASTON MD 21601		21601
BAY HEMATOLOGY / ONCOLOGY PA		8221 TEAL DR SUITE 302 EASTON EASTON MD 21601		21601
BAY HUNDRED HEALTH CENTER		933 S TALBOT ST ST ST MICHAELS MICHAELS MD 21663		21663
BAYSIDE FAMILY PRACTICE		538 CYNWOOD DR EASTON SUITE B EASTON MD 21601		21601
BEHAVIORAL HEALTH CENTER		1013 S TALBOT ST SUITE SAINT MICHAELS 13 SAINT MICHAELS MD 21663		21663
BENEDICTINE SCHOOL		7301 FRANCES ST EASTON EASTON MD 21601		21601
BENEDICTINE SCHOOL		7333 SHIRLEY DR EASTON EASTON MD 21601		21601
BENEDICTINE SCHOOL		29369 WILL ST EASTON EASTON MD 21601		21601
BENEDICTINE SCHOOL		29529 DUTCHMANS LN EASTON EASTON MD 21601		21601
BENEDICTINE SCHOOL		9018 HIGH BANKS TER EASTON EASTON MD 21601		21601
BISHOP ALAN DR		4667 BONFIELD MANOR OXFORD RD OXFORD MD 21654		21654
BISHOP JACK DDS		613 DUTCHMANS LN EASTON EASTON MD 21601		21601
BLATCHLEY VIRGINIA B PHD		18 N HANSON ST EASTON EASTON MD 21601		21601
BLISS MEDISPA		403 MARVEL CT EASTON EASTON MD 21601		21601
BOWMAN PHILIP R		522 CYNWOOD DR EASTON SUITE 200 EASTON MD		21601

	21601				
BRIAN J CORDEN MD	29520 CANVASBACK DR EASTON MD 21601	EASTON			21601
BROSKEY DONALD E DMD	604 DUTCHMANS LN EASTON MD 21601	EASTON			21601
BROWNE CYNTHIA D	8706 COMMERCE DR EASTON MD 21601	EASTON			21601
CALVERT GORDON K JR DDS	400 MARVEL CT EASTON MD 21601	EASTON			21601
CANDLE LIGHT COVE - PEACHBLOSSOM	106 W EARLE AVE EASTON MD 21606	EASTON			21606
CANDLELIGHT COVE - TRED AVON	106 W EARLE AVE EASTON MD 21601	EASTON			21601
CANTER HARRY Y JR DDS	556 CYNWOOD DR SUITE C EASTON MD 21601	EASTON			21601
CARE AFFILIATES SURGICAL	510 IDLEWILD AVE EASTON MD 21601	EASTON			21601
CARNEY STEPHEN P MD	509 IDLEWILD AVE SUITE 3 EASTON MD 21601	EASTON			21601
CECIL ARTHUR B JR MD	6680 PEACH BLOSSOM PT EASTON MD 21601	EASTON			21601
CENTURY SPINE CENTER	611 DUTCHMANS LN SUITE C EASTON MD 21601	EASTON			21601
CENTURY SPINE CENTER	609 DUTCHMANS LN EASTON MD 21601	EASTON			21601
CHANNEL MARKER	222 PORT ST MD 21601	EASTON			21601
CHANNEL MARKER INC	8626 BROOKS DR EASTON MD 21601	EASTON			21601
CHANNEL MARKER, INC.	20 N HANSON ST EASTON MD 21601	EASTON			21601
CHANNEL MARKER, INC.	19 S HANSON ST EASTON MD 21601	EASTON			21601
CHASE BREXTON HEALTH SERVICES, INC. - EASTON CENTER	300 TALBOT ST MD 21601	EASTON			21601
CHESAPEAKE ADULT SERVICES	713 DOVER ST MD 21601	EASTON			21601
CHESAPEAKE ASTHMA & ALLERGY CENTER	8695 COMMERCE DR SUITE 5 EASTON MD 21601	EASTON			21601
CHESAPEAKE BAY INTERNAL MEDICINE	2 MARTIN CT MD 21601	EASTON			21601
CHESAPEAKE BAY ORTHOPEDICS PC	401 MARVEL CT EASTON MD 21601	EASTON			21601
CHESAPEAKE CARDIOLOGY CLINIC	522 IDLEWILD AVE EASTON MD 21601	EASTON			21601
CHESAPEAKE CENTER, INC	713 DOVER ST MD 21601	EASTON			21601
CHESAPEAKE FAMILY FOOT CARE PA	609 DUTCHMANS LN SUITE C EASTON MD	EASTON			21601

			21601	
CHESAPEAKE GROUP HOMES			214 DAVIS AVE EASTON MD 21601	EASTON 21601
CHESAPEAKE GROUP HOMES			214 DAVIS AVE EASTON MD 21601	EASTON 21601
CHESAPEAKE GROUP HOMES			713 DOVER ST EASTON MD 21601	EASTON 21601
CHESAPEAKE GROUP HOMES			311 PROSPECT AVE EASTON MD 21601	EASTON 21601
CHESAPEAKE GROUP HOMES			304 PROSPECT AVE EASTON MD 21601	EASTON 21601
CHESAPEAKE GROUP HOMES			117 PARRIS LN EASTON MD 21601	EASTON 21601
CHESAPEAKE GROUP HOMES			26724 SAINT MICHAELS RD EASTON MD 21601	EASTON 21601
CHESAPEAKE GROUP HOMES			798 ARCADIA ST EASTON MD 21601	EASTON 21601
CHESAPEAKE GROUP HOMES			800 ARCADIA ST EASTON MD 21601	EASTON 21601
CHESAPEAKE GROUP HOMES			20 WRIGHTSON AVE EASTON MD 21601	EASTON 21601
CHESAPEAKE GROUP HOMES			9079 BLACK DOG ALY EASTON MD 21601	EASTON 21601
CHESAPEAKE GROUP HOMES			344 N WASHINGTON ST EASTON MD 21601	EASTON 21601
CHESAPEAKE INTERNAL MEDICINE LLC			598 CYNWOOD DR SUITE 104 EASTON MD 21601	EASTON 21601
CHESAPEAKE MEDICAL IMAGING			401 PURDY ST SUITE 104 EASTON MD 21601	EASTON 21601
CHESAPEAKE NEUROSURGICAL SURGERY			505 DUTCHMANS LN SUITE A3 EASTON MD 21601	EASTON 21601
CHESAPEAKE VOYAGERS			342 N AURORA ST SUITE C EASTON MD 21601	EASTON 21601
CHESAPEAKE WOMEN'S HEALTH LLC			401 PURDY ST SUITE 102 EASTON MD 21601	EASTON 21601
CHOPTANK COMMUNITY HEALTH SYSTEM INC			933 S TALBOT ST SUITE 1 SAINT MICHAELS MD 21663	SAINT MICHAELS 21663
CIANCI CHRISTOPHER DR			8737 BROOKS DR EASTON MD 21601	EASTON 21601
COMMUNITY SPEECH THERAPY			8615 COMMERCE DR EASTON MD 21601	EASTON 21601
CONSTELLATION SNR SV			700 PORT ST EASTON MD 21601	EASTON 21601
COOPERATIVE EXTENSION-UNIV OF MD			342 N AURORA ST SUITE A EASTON MD 21601	EASTON 21601
CORDEN BRIAN J DR			522 CYNWOOD DR SUITE 100 EASTON MD 21601	EASTON 21601
CORKRAN SHARON L DR			7428 KAREN AVE EASTON MD 21601	EASTON 21601

CORSICA RIVER	933 S TALBOT ST ST MICHEALS MD 21663	ST MICHEALS	21663
DAVID A FIELDS	6884 TRAVELERS REST CIR EASTON MD 21601	EASTON	21601
DELMARVA DAYBREAK-TALBOT ADULT MEDICAL DAY CARE	8221 TEAL DR EASTON MD 21601	EASTON	21601
DELMARVA FAMILY RESOURCES S/A AT EASTON	29466 PINTAIL DR EASTON MD 21601	EASTON	21601
DELMARVA FOUNDATION	29509 CANVASBACK DR EASTON MD 21601	EASTON	21601
DENTAL CHOICE	400 DUTCHMANS LN EASTON MD 21601	EASTON	21601
DENTON CHARLOTTA MD	606 DUTCHMANS LN EASTON MD 21601	EASTON	21601
DERAKHSHANI MALAK S	603 DUTCHMANS LN EASTON MD 21601	EASTON	21601
DERAKHSHANI M S DR	26561 N POINT RD EASTON MD 21601	EASTON	21601
DETRICH TERRY P MD	140 S WASHINGTON ST EASTON MD 21601	EASTON	21601
DIAGNOSTIC & IMAGING CENTER	10 MARTIN CT EASTON MD 21601	EASTON	21601
DIAZ SILVIA MD PA	605 DUTCHMANS LN EASTON MD 21601	EASTON	21601
DICKINSON MEDICAL GROUP	522 CYNWOOD DR EASTON MD 21601	EASTON	21601
DIGESTIVE HEALTH CENTER	511 IDLEWILD AVE EASTON MD 21601	EASTON	21601
DINAPOLI CHARLES E	404 MARVEL CT EASTON MD 21601	EASTON	21601
DING ROBERT MD	29466 PINTAIL DR SUITE 6 EASTON MD 21601	EASTON	21601
DIXON HOUSE (THE)	108 N HIGGINS ST EASTON MD 21601	EASTON	21601
DR ADELINE TRYON PSYCHOLOGIST	3 GOLDSBOROUGH ST EASTON MD 21601	EASTON	21601
DR GEORGE E DENT JR	8685 COMMERCE DR EASTON MD 21601	EASTON	21601
DR JOHN SCHNEIDER	4 CAULK LN SUITE C EASTON MD 21601	EASTON	21601
DR MICHAEL FISH	511 IDLEWILD AVE EASTON MD 21601	EASTON	21601
DR SAYED I ALI	505 DUTCHMANS LN SUITE A8 EASTON MD 21601	EASTON	21601
DUNN JOHN R DR	102 JL THOMPSON DR OXFORD MD 21654	OXFORD	21654
DYER PAUL K MD	4 CAULK LN SUITE A EASTON MD 21601	EASTON	21601
EASTERN SHORE ACCUPUNCTURE & HEALING ARTS	114 N WASHINGTON ST EASTON MD 21601	EASTON	21601
EASTERN SHORE CHIROPRACTIC CENTER	8223 ELLIOTT RD EASTON MD 21601	EASTON	21601

EASTERN SHORE EMERGENCY MEDICINE PHYSICIANS LLC	219 S WASHINGTON ST EASTON MD 21601	EASTON	21601
EASTERN SHORE GYNECOLOGY PA	598 CYNWOOD DR SUITE 105 EASTON MD 21601	EASTON	21601
EASTERN SHORE PSYCHOLOGICAL SE	29520 CANVASBACK DR EASTON MD 21601	EASTON	21601
EASTERN SHORE PSYCHOLOGICAL SERVICES	29520 CANVASBACK DR EASTON MD 21601	EASTON	21601
EASTERN SHORE PSYCHOLOGICAL SERVICES	29516 CANVASBACK DR EASTON MD 21601	EASTON	21601
EASTERN SHORE UROLOGY ASSOCIATES	6 CAULK LN EASTON MD 21601	EASTON	21601
EASTON DERMATOLOGY ASSOCIATES	403 MARVEL CT EASTON MD 21601	EASTON	21601
EASTON DIALYSIS CENTER	402 MARVEL CT EASTON MD 21601	EASTON	21601
EASTON EYE SURGERY CENTER, LLC	503 DUTCHMANS LN EASTON MD 21601	EASTON	21601
EASTON FAMILY PHYSICIANS	508 IDLEWILD AVE SUITE 3 EASTON MD 21601	EASTON	21601
EASTON FOOT & ANKLE CENTERS	8579 COMMERCE DR SUITE 100 EASTON MD 21601	EASTON	21601
EASTON HYPNOSIS - J E QUAST	12 GLENWOOD AVE EASTON MD 21601	EASTON	21601
EASTON PHYSICAL THERAPY & SPORTS CARE	401 MARVEL CT SUITE B EASTON MD 21601	EASTON	21601
EGLSEDER LUDWIG III MD	503 CYNWOOD DR EASTON MD 21601	EASTON	21601
EPSTEIN LARRY D DR	24060 SAINT MICHAELS RD SAINT MICHAELS MD 21663	SAINT MICHAELS	21663
FAMILY CARE OF EASTON	8579 COMMERCE DR SUITE 106 EASTON MD 21601	EASTON	21601
FAMILY DENTISTRY SAINT MICHAELS	609 S TALBOT ST SAINT MICHAELS MD 21663	SAINT MICHAELS	21663
FOR ALL SEASONS, INC.	300 TALBOT ST EASTON MD 21601	EASTON	21601
FOREMOST MASSAGE	8221 TEAL DR SUITE 427 EASTON MD 21601	EASTON	21601
FORLIFER SUSAN MD	522 CYNWOOD DR SUITE 400 EASTON MD 21601	EASTON	21601
FRIEDMAN SCOTT D MD	7952 SHIPSHEAD CREEK DR EASTON MD 21601	EASTON	21601
GARDENS AT WILLIAM HILL MANOR (THE)	545 CYNWOOD DR EASTON MD 21601	EASTON	21601
GEORGETOWN DERMPATH	723 GOLDSBOROUGH ST EASTON MD 21601	EASTON	21601
GHODSI ZULEIKA M	403 MARVEL CT EASTON MD 21601	EASTON	21601

GORIN HERBERT P	2 MARTIN CT EASTON MD 21601	EASTON	21601
GREENBAUM RICHARD R PHD	8706 COMMERCE DR EASTON MD 21601	EASTON	21601
GUTHRIE EUGENE H DR	50 DAVIS LN EASTON MD 21601	EASTON	21601
HALEY MARTIN C DDS	7 CAULK LN EASTON MD 21601	EASTON	21601
HEALTH TESTING CENTERS - EASTON	8161 TEAL DR EASTON MD 21601	EASTON	21601
HEALTHSOUTH	40 S WASHINGTON ST EASTON MD 21601	EASTON	21601
HEARTFIELDS AT EASTON	700 PORT ST EASTON MD 21601	EASTON	21601
HEATON J FREDRICK DMD	556 CYNWOOD DR SUITE B EASTON MD 21601	EASTON	21601
HIGGINBOTTOM MARK A DMD	8649 MARENGO FARM RD EASTON MD 21601	EASTON	21601
HIGGINBOTTOM ORTHODONTICS	556 CYNWOOD DR SUITE A EASTON MD 21601	EASTON	21601
HILL CYNDA DDS	508 CYNWOOD DR SUITE B EASTON MD 21601	EASTON	21601
HOLSTON ALVAN M DR	5 CAULK LN EASTON MD 21601	EASTON	21601
HEMOCALL	101 MARLBORO AVE EASTON MD 21601	EASTON	21601
HU EDWARD H MD PHD	405 MARVEL CT EASTON MD 21601	EASTON	21601
INTEGRATIVE MEDICINE	607 DUTCHMANS LN EASTON MD 21601	EASTON	21601
JONES LEEROY MD & FREDERICKA L	1723 FERRY POINT CT TRAPPE MD 21673	TRAPPE	21673
KELLY BONNETTE	3 GOLDSBOROUGH ST EASTON MD 21601	EASTON	21601
KELLY JIM DR DOCTOR	29466 PINTAIL DR SUITE 5 EASTON MD 21601	EASTON	21601
KNOX BENJAMIN DR	4895 JUDITHS GARDEN RD OXFORD MD 21654	OXFORD	21654
KNUDSEN JOHN F DDS	127 N WEST ST EASTON MD 21601	EASTON	21601
KRAMPF MARTHA W PHD APRN	16 GLENWOOD AVE EASTON MD 21601	EASTON	21601
LABORATORY CORPORATION OF AMERICA	401 PURDY ST SUITE 202 EASTON MD 21601	EASTON	21601
LABORATORY CORPORATION OF AMERICA	8615 COMMERCE DR EASTON MD 21601	EASTON	21601
LAMONT VALERIE	5 FEDERAL ST SUITE 304 EASTON MD 21601	EASTON	21601
LANGFITT MARK MD	8579 COMMERCE DR SUITE 104 EASTON MD 21601	EASTON	21601

LAUKENMANN BERNARD MD	211 E EARLE AVE EASTON MD 21601	EASTON	21601
LAVOIE ANDREW J DDS JR	19 FEDERAL ST MD 21601	EASTON	21601
LEE DAVID C	27985 PEACH ORCHARD RD EASTON MD 21601	EASTON	21601
LEWERS DONALD T MD	27303 BAILEYS NECK RD EASTON MD 21601	EASTON	21601
LEWIS-MEAD ERICA DDS	613 DUTCHMANS LN EASTON MD 21601	EASTON	21601
LOUIS JOHN V LLC	218 BAY ST 21601	EASTON MD	21601
MAPLE SHADE YOUTH	933 S TALBOT ST MICHAELS MD 21663	SAINT MICHAELS	21663
MARGRET BOWEN QUIMBY DDS	538 CYNWOOD DR SUITE C EASTON MD 21601	EASTON	21601
MASTANDREA JOHN DR & ANITA	8831 QUAILSAR RD EASTON MD 21601	EASTON	21601
MD STATEWIDE HEALTH NETWORK	401 PURDY ST MD 21601	EASTON	21601
MEMORIAL HOSPITAL AT EASTON	219 S WASHINGTON ST EASTON MD 21601	EASTON	21601
MEMORIAL HOSPITAL REHABILITATION CENTER	510 IDLEWILD AVE EASTON MD 21601	EASTON	21601
MENTAL HEALTH ASSOCIATION IN TALBOT COUNTY	611 DUTCHMANS LN SUITE B EASTON MD 21601	EASTON	21601
MID SHORE MENTAL HEALTH SYSTEMS INC	11 N WASHINGTON ST EASTON MD 21601	EASTON	21601
MID-SHORE MENTAL HEALTH	8221 TEAL DR SUITE 203 EASTON MD 21601	EASTON	21601
MID-SHORE SURGICAL EYE CENTER	8420 OCEAN GATEWAY EASTON MD 21601	EASTON	21601
MID-SHORE WOMEN'S HEALTH LLC	401 PURDY ST SUITE 201 EASTON MD 21601	EASTON	21601
MILLER JAY H JR	26905 BUNNY LN EASTON MD 21601	EASTON	21601
MORRIS KRISTINE HOUCK DDS	508 CYNWOOD DR SUITE D EASTON MD 21601	EASTON	21601
MPM DELMARVA RADIOLOGY	29 CREAMERY LN EASTON MD 21601	EASTON	21601
MULREANY JAMES J DDS CEDAR POINT	27779 CEDAR POINT RD EASTON MD 21601	EASTON	21601
NAVE JAY H DDS	29585 GALLOWAY RUN EASTON MD 21601	EASTON	21601
NIEBYL PETER H	4 CAULK LN SUITE B EASTON MD 21601	EASTON	21601
NIZOLEK JOE DR	9679 OCEAN GTWY EASTON MD 21601	EASTON	21601
NORTON THOMAS F	9415 JET LN 21601	EASTON MD	21601

ORSINI ROGER A MD	505 DUTCHMANS LN EASTON MD 21601	21601
ORTEL CHERYL D	598 CYNWOOD DR EASTON MD 21601	21601
ORTEL RICHARD W DR	26388 PRESQUILE DR N EASTON MD 21601	21601
P S I FAMILY SERVICES, INC	342 N AURORA ST EASTON MD 21608	21608
PACKARD A GIBSON DR JR	7040 SCHOOLHOUSE LN EASTON MD 21601	21601
PARKWAY DENTIST	8695 COMMERCE DR EASTON MD 21601	21601
PARSONS MICHAEL P MD	8133 ELLIOTT RD EASTON MD 21601	21601
PARTNERS IN CARE	400 BROOKLETTS AVE EASTON MD 21601	21601
PATTERSON ROBERT J MD	800 S TALBOT ST SAINT MICHAELS MD 21663	21663
PINNACLE PLASTIC SURGERY	5 MARTIN CT EASTON MD 21601	21601
PLANNED PARENTHOOD: HEALTH CENTER MD	EASTON 8579 COMMERCE DR EASTON MD 21601	21601
RAYLAND ACRES I	29160 KRISMOR CT TRAPPE MD 21673	21673
RAYLAND ACRES II	29140 KRISMOR CT TRAPPE MD 21673	21673
RESNICK MARK G DR	506 IDLEWILD AVE EASTON MD 21601	21601
RIVER FAMILY PHYSICIANS	555 CYNWOOD DR EASTON MD 21601	21601
S T E P, INC	101 MARLBORO RD EASTON MD 21601	21601
SCHIEKEN LAWRENCE S MD	8695 COMMERCE DR EASTON MD 21601	21601
SCHLEGEL MARY E MD	505 DUTCHMANS LN EASTON MD 21601	21601
SCHNEIDER TIMOTHY MD	29466 PINTAIL DR SUITE 3 EASTON MD 21601	21601
SCRIBNER BRENDA C MD	5 FEDERAL ST SUITE 225 EASTON MD 21601	21601
SERENITY MASSAGE THERAPY	33 E DOVER ST EASTON MD 21601	21601
SERINO JOHN W DDS MS PA	538 CYNWOOD DR EASTON MD 21601	21601
SEWELL THOMAS L DPM	506 IDLEWILD AVE EASTON MD 21601	21601

SHEPPARD PRATT HEALTH SYSTEM	509 IDLEWILD AVE EASTON MD 21601	EASTON	21601
SHORE BEHAVIORAL HEALTH SERVICES	219 S WASHINGTON ST EASTON MD 21601	EASTON	21601
SHORE CLINICAL FOUNDATION	29515 CANVASBACK DR EASTON MD 21601	EASTON	21601
SHORE COMPREHENSIVE PAIN ASSOCIATES	219 S WASHINGTON ST EASTON MD 21601	EASTON	21601
SHORE COMPREHENSIVE UROLOGY	505 DUTCHMANS LN SUITE A6 EASTON MD 21601	EASTON	21601
SHORE ENDOCRINOLOGY-JOSLIN DIABETES CENTER	219 S WASHINGTON ST EASTON MD 21601	EASTON	21601
SHORE FAMILY DENTISTRY LLC	29466 PINTAIL DR SUITE 16 EASTON MD 21601	EASTON	21601
SHORE HEALTH LABORATORIES	301 BAY ST EASTON MD 21601	EASTON	21601
SHORE HEALTH SYSTEM SURGERY CENTER	6 CAULK LN EASTON MD 21601	EASTON	21601
SHORE HOME CARE & HOSPICE	121 FEDERAL ST EASTON MD 21601	EASTON	21601
SHORE HOSPITALISTS ASSOCIATES	508 IDLEWILD AVE EASTON MD 21601	EASTON	21601
SHORE REGIONAL BREAST CENTER	219 S WASHINGTON ST EASTON MD 21601	EASTON	21601
SHORE REGIONAL CANCER CENTER	509 IDLEWILD AVE SUITE 1 EASTON MD 21601	EASTON	21601
SHORE REHABILITATION CENTER	510 IDLEWILD AVE EASTON MD 21601	EASTON	21601
SHORE SURGICAL CARE	505 DUTCHMANS LN SUITE B2 EASTON MD 21601	EASTON	21601
SLATKIN STEPHEN E DR	20 BAY ST EASTON MD 21601	EASTON	21601
SMOLOSKI ROBERT J MD	609 DUTCHMANS LN SUITE 2 EASTON MD 21601	EASTON	21601
SOULATI ALI	508 CYNWOOD DR SUITE A EASTON MD 21601	EASTON	21601
STOUT DAVID A & FRANCES E MD	8543 DONCASTER RD EASTON MD 21601	EASTON	21601
SURGERY CENTER OF EASTON	510 IDLEWILD AVE EASTON MD 21601	EASTON	21601
SWEET RONALD C MD	27962 OAKLANDS CIR EASTON MD 21601	EASTON	21601
TALBOT COUNTY	29041 CORKRAN RD EASTON MD 21601	EASTON	21601
TALBOT COUNTY ADDICTIONS PROGRAM	301 BAY ST EASTON MD 21601	EASTON	21601
TALBOT COUNTY ADDICTIONS PROGRAM- SUBSTANCE TREATMENT AND RECOVERY(STAR)	115 W DOVER ST EASTON MD 21601	EASTON	21601

TALBOT COUNTY EMERGENCY MEDICAL SERVICES	315 AURORA PARK DR EASTON MD 21601	EASTON	21601
TALBOT COUNTY HEALTH DEPARTMENT	100 S HANSON ST EASTON MD 21601	EASTON	21601
TALBOT DERMATOLOGY & DERMATOLOGIC SURGERY PA	5 CAULK LN EASTON MD 21601	EASTON	21601
TALBOT HOSPICE FOUNDATION	586 CYNWOOD DR EASTON MD 21601	EASTON	21601
THE ARC OF THE CENTRAL CHESAPEAKE REGION INC	29372 WOODRIDGE DR EASTON MD	EASTON	21601
THE ARC OF THE CENTRAL CHESAPEAKE REGION INC	8626 BROOKS DR EASTON MD 21601	EASTON	21601
THE BAY PEDIATRIC CENTER	606 DUTCHMANS LN SUITE 2 EASTON MD 21601	EASTON	21601
THE BORCHARDT GROUP	101 BAY ST SUITE 7 EASTON MD 21601	EASTON	21601
THE MEDICAL CLINIC PA	505 DUTCHMANS LN SUITE A2 EASTON MD 21601	EASTON	21601
THE ORTHOPEDIC CENTER	510 IDLEWILD AVE SUITE 200 EASTON MD 21601	EASTON	21601
THE PINES GENESIS ELDERCARE	610 DUTCHMANS LN EASTON MD 21601	EASTON	21601
THE RELAXATION STATION	8695 COMMERCE DR SUITE 1 EASTON MD 21601	EASTON	21601
TIDEWATER ANESTHESIA	29 CREAMERY LN EASTON MD 21601	EASTON	21601
TIDEWATER PHYSICAL THERAPY & REHABILITATION ASSOC	406 MARVEL CT EASTON MD 21601	EASTON	21601
TIDEWATER PHYSICAL THERAPY & REHABILITATION ASSOCIATES PA	1013 S TALBOT ST SUITE L SAINT MICHAELS MD 21663	SAINT MICHAELS	21663
TIDEWATER PODIATRY	508 IDLEWILD AVE EASTON MD 21601	EASTON	21601
TONG RODNEY CMT	5 FEDERAL ST EASTON MD 21601	EASTON	21601
TREVER ROBERT W MD	29504 HAWKES HILL RD EASTON MD 21601	EASTON	21601
WHARTON WILLIAM F DR	29441 CORBIN PKWY EASTON MD 21601	EASTON	21601
WHITESSELL PETER L	505 DUTCHMANS LN SUITE A7 EASTON MD 21601	EASTON	21601
WILHELMSSEN H DR	6593 LOCUST GROVE RD EASTON MD 21601	EASTON	21601
WILL DAVID R MD	7300 WAVERLY ISLAND RD EASTON MD 21601	EASTON	21601
WILLIAM HILL MANOR HEALTHCARE	501 DUTCHMANS LN EASTON MD 21601	EASTON	21601
WOLDEMICHAEL SARA DR	207 BETHUNE DR EASTON MD 21601	EASTON	21601

WOLTERS CHRISTIANE D MD	505 DUTCHMANS LN SUITE A EASTON MD 21601	EASTON	21601
WOOD HORACE K DMD	508 CYNWOOD DR SUITE C EASTON MD 21601	EASTON	21601
YOUR DOC'S IN LLC	8163 OCEAN GTWY EASTON MD 21601	EASTON	21601
ZUSCHNITT MICHAEL	611 DUTCHMANS LN SUITE D EASTON MD 21601	EASTON	21601

Table 52: Talbot County Public Safety Anchor Institutions

Talbot County Public Safety Anchor Institutions			
Anchor Institution Name	Address	City	Zip Code
EASTON POLICE DEPARTMENT	106 W DOVER ST EASTON MD 21601	EASTON	21601
QUEEN ANNE HILLSBORO VFC - STA 800	13512 FIRST STREET QUEEN ANNE MD 21657	QUEEN ANNE	21657
TALBOT COUNTY 911 CENTER	605 PORT ST EASTON MD 21601	EASTON	21601

Table 53: Talbot County Community Support Anchor Institutions

Talbot County Community Support Anchor Institutions			
Anchor Institution Name	Address	City	Zip Code
CHOPTANK RIVER FISHING PIER	29761 BOLINGBROKE POINT DR TRAPPE MD 21673	TRAPPE	21673
DMSP BARRACK I - EASTON	7053 OCEAN GTWY GTWY EASTON MD 21601	EASTON	21601
DMSP UPPER EASTERN REGIONAL OFFICE	301 BAY ST EASTON MD 21601	EASTON	21601
EASTON MICROWAVE SHELTER	7053 OCEAN GTWY EASTON MD 21601	EASTON	21601
EASTON MVA OFFICE	9148 CENTREVILLE RD EASTON MD 21601	EASTON	21601
MVA EASTON	9148 CENTREVILLE RD EASTON MD 21601	EASTON	21601
OXFORD COOPERATIVE LABORATORY	904 S MORRIS ST OXFORD MD 21654	OXFORD	21654
SHA EASTON	8265 OCEAN GTWY EASTON MD 21601	EASTON	21601
SHA ERL	8204 ELLIOTT RD EASTON MD 21601	EASTON	21601
TALBOT 911	605 PORT ST EASTON MD 21601	EASTON	21601
TALBOT SOIL CONSERVATION DISTRICT	28577 MARYS CT EASTON MD 21601	EASTON	21601

	EASTON MD 21601				
WYE MILLS FISHERIES OFFICE	14214 OLD WYE MILLS RD WYE MILLS MD 21679	WYE MILLS			21679
WYE MILLS WILDLIFE AND HERITAGE OFFICE	909 WYE MILLS RD WYE MILLS MD 21679	WYE MILLS			21679

Table 54: Broadband Technologies for the Future

	Fibre (FTTH)	Copper (VDSL)	Cable (DOCSIS 3.0)	Mobile (4G)	Satellite
Speed and latency	Virtually unlimited speed (currently up to 1Gbps), very low latency.	Limited speed (VDSL 2 can achieve its maximum theoretical speed of 100 Mbps only within a range of 300 m). Practical speeds are much lower than the advertised speeds.	Bandwidth in 160 Mbps in downstream and 120 Mbps in upstream (reallocation of analogue TV channels into compressed digital space can leverage the capability of DOCSIS 3.0 to allow for 1Gbps speeds in the future).	Theoretical bandwidth of up to 100 Mbps for mobile access and 1 Gbps for nomadic access (LTE Advanced). The speed depends on the distance user/BTS and on the number of users connected to one base station.	Currently commercially available 4 Mbps (theoretically up to 1 Gbps in the future). High latency (500-900 ms) makes it not suitable for real-time services (e.g. VoIP, real-time games). Fair Access Policies in use (setting download quotas)
Symmetry	Yes	Asymmetric	Asymmetric	Asymmetric	Asymmetric
Deployment	Future proof technology though requires substantial civil engineering works (new-build of last-mile infrastructure). Current technology can serve users to up to 30km from the exchange.	Use of old legacy network. Deployment limited to a short distance from the exchange (only at 1.6km VDSL2 speeds are comparable to ADSL2).	Retooling the existing infrastructure, however no drastic upgrades necessary.	High suitability to cover remote areas where it would be economically inefficient to lay fibre. Larger blocks of spectrum will be necessary.	Suitable to cover remote areas where it would be economically inefficient to lay fibre. Expensive equipment for end-users.
Energy efficiency	High efficiency (PONs have only passive components in the neighbourhood infrastructure which minimizes the network maintenance cost and requirements).	Lower efficiency (active networks like DSL, VDSL and cable have active components in the network backbone equipment, in the central office, in the neighbourhood network infrastructure, and in the customer premises equipment; need to use amplifiers).			Good energy efficiency (satellites are solar-powered).

Table 55: List of Service Providers in Upper Eastern Shore

Providers	Cecil County	Queen Anne's County	Kent	Caroline County	Talbot County
	AT&T (MW)	AT&T (MW)	AT&T (MW)	AT&T (MW)	AT&T (MW)
	Comcast ©	Atlantic Broadband (C)	HughesNet (S)	HughesNet (S)	Easton Utilities (C)
	Cricket (MW)	HughesNet (S)	Sprint (MW)	Sprint (MW)	HughesNet (S)
	Sprint (MW)	Sprint (MW)	Starband (S)	Starband (S)	Sprint (MW)
	T-Mobile (MW)	Starband (S)	Verizon (D)	Verizon Wireless (MW)	Starband (S)
	Verizon (D)	Verizon Wireless (MW)	Verizon Wireless (MW)	Wild Blue (S)	Verizon (D)
	Verizon Wireless (MW)	Wild Blue (S)	Wild Blue (S)		Verizon Wireless (MW)
	Wild Blue (S)				Wild Blue (S)
Services Available	Cable Modem (C)	Cable Modem (C)	DSL (D)	Mobile Wireless (MW)	Cable Modem (C)
	DSL (D)	Mobile Wireless (MW)	Mobile Wireless (MW)	Satellite (S)	DSL (D)
	Mobile Wireless (MW)	Satellite (S)	Satellite	Caroline County	Mobile Wireless (MW)
	Satellite (S)			AT&T (MW)	Satellite (S)

Spectrum Licenses in Upper Eastern Shore

Table 56: Spectrum Licenses Information for Cecil County

Common Name	Radio Service	Tags	Frequency Band (MHz)	Licensee/Lessee Name	Market
AT&T	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	710 - 716	AT&T MOBILITY II LLC	CMA069 - Wilmington, DE-NJ-MD
AT&T	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	722 - 728	AT&T Mobility Spectrum LLC	BEA012 - Phil.-Atl. City PA-NJ-DE-MD
AT&T	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	704 - 710	AT&T Mobility Spectrum LLC	CMA069 - Wilmington, DE-NJ-MD
AT&T	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	716 - 722	AT&T Mobility Spectrum LLC	EAG702 - Mid-Atlantic
AT&T	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1865 - 1870	NEW CINGULAR WIRELESS PCS, LLC	BTA346 - Philadelphia, PA-Wilmington

					DE
			1945 - 1950		
AT&T	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1850 - 1865	NEW CINGULAR WIRELESS PCS, LLC	MTA009 - Philadelphia
AT&T	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1850 - 1865	New Cingular Wireless PCS, LLC	MTA009 - Philadelphia
			1930 - 1945		
AT&T	Cellular	Broadband; Fixed Wireless; Mobile Radio; Phone	824 - 835	NEW CINGULAR WIRELESS PCS, LLC	CMA069 - Wilmington, DE-NJ-MD
BALTIMORE (WNUV-TV) LICENSEE, INC.	Broadcast Television	Television	626 - 632	BALTIMORE (WNUV-TV) LICENSEE, INC.	BALTIMORE, MD
BALTIMORE WIRELESS CABLE TV, INC.	BRS	Broadband; Fixed Wireless; Phone; Television	2496 - 2690	BALTIMORE WIRELESS CABLE TV, INC.	Baltimore, MD
BROADCASTING MEDIA PARTNERS INC.	Broadcast Television	Television	560 - 566	BROADCASTING MEDIA PARTNERS INC.	VINELAND, NJ
CBS BROADCASTING INC.	Broadcast Television	Television	542 - 548	CBS BROADCASTING INC.	PHILADELPHIA, PA
Clearwire	BRS	Broadband; Fixed Wireless; Phone; Television	2496 - 2690	NSAC, LLC	BTA346 - Philadelphia, PA-Wilmington DE
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings II, LLC	BALTIMORE CITY, MD
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings II, LLC	BALTIMORE CITY, MD
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings II, LLC	BALTIMORE CITY, MD
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings II, LLC	LANCASTER, PA
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings II, LLC	YORK, PA
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings III, LLC	BALTIMORE CITY, MD
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings III, LLC	BALTIMORE CITY, MD
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings III, LLC	BALTIMORE CITY, MD

		Television			
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Fixed Wireless Holdings, LLC	LANCASTER, PA
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Fixed Wireless Holdings, LLC	YORK, PA
Comcast	WCS	Broadband; Fixed Wireless	2310 - 2315	Comcast WCS ME04, Inc.	MEA004 - Philadelphia
Comcast	WCS	Broadband; Fixed Wireless	2315 - 2320	Comcast WCS ME04, Inc.	REA001 - Northeast
FOX TELEVISION STATIONS, INC.	Broadcast Television	Television	632 - 638	FOX TELEVISION STATIONS, INC.	BALTIMORE, MD
FOX TELEVISION STATIONS, INC.	Broadcast Television	Television	638 - 644	FOX TELEVISION STATIONS, INC.	PHILADELPHIA, PA
Globalstar Licensee LLC	MSS	Phone; Satellite	1610 - 1610.6 - 1613.8	Globalstar Licensee LLC	Nationwide and Globally
HITN Spectrum, LLC	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	HITN Spectrum, LLC	BALTIMORE CITY, MD
Horizon Wi-Com	WCS	Broadband; Fixed Wireless	2305 - 2310	Horizon Wi-Com LLC	MEA004 - Philadelphia
INDEPENDENCE PUBLIC MEDIA OF PHILADELPHIA, INC.	Broadcast Television	Television	596 - 602	INDEPENDENCE PUBLIC MEDIA OF PHILADELPHIA, INC.	PHILADELPHIA, PA
ION MEDIA PHILADELPHIA LICENSE, INC.	Broadcast Television	Television	572 - 578	ION MEDIA PHILADELPHIA LICENSE, INC.	WILMINGTON, DE
Inmarsat plc	MSS	Phone; Satellite	1525 - 1535	Inmarsat plc	Nationwide and Globally
Inmarsat plc	MSS	Phone; Satellite	1525 - 1535	Inmarsat plc	Nationwide and Globally
Intelsat North America LLC	MSS	Phone; Satellite	1535 - 1559 - 1626.5 - 1660	Intelsat North America LLC	Nationwide and Globally
Iridium Constellation LLC	MSS	Phone; Satellite	1613.8 - 1626.5	Iridium Constellation LLC	Nationwide and Globally
Leap	AWS - 1	Broadband; Fixed Wireless; Phone	1710 - 1720	Cricket License Company, LLC	CMA069 - Wilmington, DE-NJ-MD
LightSquared	MSS	Phone; Satellite	1525 - 1535 - 1559	LightSquared Subsidiary LLC	Nationwide and Globally
MARYLAND PUBLIC BROADCASTING COMMISSION	Broadcast Television	Television	638 - 644	MARYLAND PUBLIC BROADCASTING COMMISSION	ANNAPOLIS, MD

MARYLAND PUBLIC BROADCASTING COMMISSION	Broadcast Television	Television	560 - 566	MARYLAND PUBLIC BROADCASTING COMMISSION	BALTIMORE, MD
MARYLAND STATE DEPART OF EDUCATION	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	MARYLAND STATE DEPART OF EDUCATION	BALTIMORE CITY, MD
MSV International, LLC	MSS	Phone; Satellite	1525 - 1535	MSV International, LLC	Nationwide and Globally
MetroPCS	AWS - 1	Broadband; Fixed Wireless; Phone	1735 - 1740	MetroPCS AWS, LLC	REA001 - Northeast
NBC TELEMUNDO LICENSE LLC	Broadcast Television	Television	590 - 596	NBC TELEMUNDO LICENSE LLC	PHILADELPHIA, PA
NEW JERSEY PUBLIC BROADCASTING AUTHORITY	Broadcast Television	Television	518 - 524	NEW JERSEY PUBLIC BROADCASTING AUTHORITY	CAMDEN, NJ
NEWPORT TELEVISION LICENSE LLC	Broadcast Television	Television	512 - 518	NEWPORT TELEVISION LICENSE LLC	HARRISBURG, PA
NEXSTAR BROADCASTING, INC.	Broadcast Television	Television	524 - 530	NEXSTAR BROADCASTING, INC.	LANCASTER, PA
NRJ TV PHILLY OPCO, LLC	Broadcast Television	Television	536 - 542	NRJ TV PHILLY OPCO, LLC	READING, PA
New DBSD Satellite Services G.P., Debtor-in-Possession	MSS	Phone; Satellite	2000 - 2020	New DBSD Satellite Services G.P., Debtor-in-Possession	Nationwide and Globally
Nextwave	WCS	Broadband; Fixed Wireless	2345 - 2350	WCS Wireless License Subsidiary, LLC	REA001 - Northeast
North American Catholic Educational Programming Foundation, Inc.	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	North American Catholic Educational Programming Foundation, Inc.	LANCASTER, PA
North American Catholic Educational Programming Foundation, Inc.	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	North American Catholic Educational Programming Foundation, Inc.	YORK, PA
PHILADELPHIA TELEVISION STATION WPSG, INC.	Broadcast Television	Television	578 - 584	PHILADELPHIA TELEVISION STATION WPSG, INC.	PHILADELPHIA, PA
Pegasus Guard Band, LLC Debtor-In-Possession	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	757 - 758	Pegasus Guard Band, LLC Debtor-In-Possession	MEA004 - Philadelphia
RED LION BROADCASTING COMPANY, INC.	Broadcast Television	Television	566 - 572	RED LION BROADCASTING COMPANY, INC.	RED LION, PA
SCRIPPS MEDIA, INC.	Broadcast Television	Television	614 - 620	SCRIPPS MEDIA, INC.	BALTIMORE, MD

	n				
SINCLAIR BROADCAST GROUP, INC.	Broadcast Television	Television	662 - 668	SINCLAIR BROADCAST GROUP, INC.	BALTIMORE, MD
SpectrumCoAWS	AWS - 1	Broadband; Fixed Wireless; Phone	1720 - 1730	SpectrumCo LLC	BEA012 - Phil.-Atl. City PA-NJ-DE-MD
Sprint Nextel	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1910 - 1915	Nextel Communications of the Mid-Atlantic, Inc.	BEA012 - Phil.-Atl. City PA-NJ-DE-MD
Sprint Nextel	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1870 - 1885	PHILLIECO, L.P.	MTA009 - Philadelphia
T-Mobile	AWS - 1	Broadband; Fixed Wireless; Phone	1730 - 1735	T-Mobile License LLC	BEA012 - Phil.-Atl. City PA-NJ-DE-MD
T-Mobile	AWS - 1	Broadband; Fixed Wireless; Phone	1740 - 1745	T-Mobile License LLC	REA001 - Northeast
T-Mobile	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1895 - 1910	Cook Inlet GSM IV PCS Holdings, LLC	BTA346 - Philadelphia, PA-Wilmington DE
T-Mobile	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1895 - 1910	T-Mobile License LLC	BTA346 - Philadelphia, PA-Wilmington DE
TRIBUNE TELEVISION COMPANY, DEBTOR-IN-POSSESSION	Broadcast Television	Television	488 - 494	TRIBUNE TELEVISION COMPANY, DEBTOR-IN-POSSESSION	PHILADELPHIA, PA
TRIBUNE TELEVISION COMPANY, DEBTOR-IN-POSSESSION	Broadcast Television	Television	668 - 674	TRIBUNE TELEVISION COMPANY, DEBTOR-IN-POSSESSION	YORK, PA
TRINITY CHRISTIAN CENTER OF SANTA ANA, INC.	Broadcast Television	Television	548 - 554	TRINITY CHRISTIAN CENTER OF SANTA ANA, INC.	BURLINGTON, NJ
TerreStar License Inc., Debtor-in-Possession	MSS	Phone; Satellite	2000 - 2020	TerreStar License Inc., Debtor-in-Possession	Nationwide and Globally
The Source For Learning, Inc.	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	The Source For Learning, Inc.	BALTIMORE CITY, MD
UNIVERSITY OF MARYLAND	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	UNIVERSITY OF MARYLAND	BALTIMORE CITY, MD
UNIVERSITY OF	EBS	Broadband; Fixed	2496 -	UNIVERSITY OF	BALTIMORE

MARYLAND COLLEGE PARK		Wireless; Television	2690	MARYLAND COLLEGE PARK	CITY, MD
UNIVERSITY OF MARYLAND, COLLEGE PARK	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	UNIVERSITY OF MARYLAND, COLLEGE PARK	BALTIMORE CITY, MD
Verizon Wireless	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	698 - 704	Cellco Partnership	BEA012 - Phil.-Atl. City PA-NJ-DE-MD
Verizon Wireless	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	746 - 757	Cellco Partnership	REA001 - Northeast
Verizon Wireless	AWS - 1	Broadband; Fixed Wireless; Phone	1745 - 1755	Cellco Partnership	REA001 - Northeast
Verizon Wireless	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1885 - 1890	Cellco Partnership	BTA346 - Philadelphia, PA-Wilmington DE
			1965 - 1970		
Verizon Wireless	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1890 - 1895	Cellco Partnership	BTA346 - Philadelphia, PA-Wilmington DE
Verizon Wireless	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1890 - 1895	Verizon Wireless Telecom Inc.	BTA346 - Philadelphia, PA-Wilmington DE
Verizon Wireless	Cellular	Broadband; Fixed Wireless; Mobile Radio; Phone	835 - 845	Cellco Partnership	CMA069 - Wilmington, DE-NJ-MD
			846.5 - 849		
WHYY, INC.	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	WHYY, INC.	NEW CASTLE, DE
WITF, INC	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	WITF, INC	LANCASTER, PA
WITF, INC	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	WITF, INC	YORK, PA
WITF, INC.	Broadcast Television	Television	602 - 608	WITF, INC.	HARRISBURG, PA

Table 57: Spectrum Licenses Information for Queen Anne’s County

Common Name	Radio Service	Tags	Frequency Band (MHz)	Licensee/Lessee Name	Market
AT&T	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	710 - 716	AT&T MOBILITY II LLC	CMA069 - Wilmington, DE-NJ-MD
AT&T	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	722 - 728	AT&T Mobility Spectrum LLC	BEA012 - Phil.-Atl. City PA-NJ-DE-MD
AT&T	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	704 - 710	AT&T Mobility Spectrum LLC	CMA069 - Wilmington, DE-NJ-MD
AT&T	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	716 - 722	AT&T Mobility Spectrum LLC	EAG702 - Mid-Atlantic
AT&T	Broadband and PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1865 - 1870	NEW CINGULAR WIRELESS PCS, LLC	BTA346 - Philadelphia, PA-Wilmington DE
1945 - 1950					
AT&T	Broadband and PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1850 - 1865	NEW CINGULAR WIRELESS PCS, LLC	MTA009 - Philadelphia
AT&T	Broadband and PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1850 - 1865	New Cingular Wireless PCS, LLC	MTA009 - Philadelphia
1930 - 1945					
AT&T	Cellular	Broadband; Fixed Wireless; Mobile Radio; Phone	824 - 835	NEW CINGULAR WIRELESS PCS, LLC	CMA069 - Wilmington, DE-NJ-MD
BALTIMORE (WNUV-TV) LICENSEE, INC.	Broadcast Television	Television	626 - 632	BALTIMORE (WNUV-TV) LICENSEE, INC.	BALTIMORE, MD
BALTIMORE WIRELESS CABLE TV, INC.	BRS	Broadband; Fixed Wireless; Phone; Television	2496 - 2690	BALTIMORE WIRELESS CABLE TV, INC.	Baltimore, MD
BROADCASTING MEDIA PARTNERS INC.	Broadcast Television	Television	560 - 566	BROADCASTING MEDIA PARTNERS INC.	VINELAND, NJ
CBS BROADCASTING INC.	Broadcast Television	Television	542 - 548	CBS BROADCASTING INC.	PHILADELPHIA, PA

Clearwire	BRS	Broadband; Fixed Wireless; Phone; Television	2496 - 2690	NSAC, LLC	BTA346 - Philadelphia, PA- Wilmington DE
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings II, LLC	BALTIMORE CITY, MD
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings II, LLC	BALTIMORE CITY, MD
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings II, LLC	BALTIMORE CITY, MD
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings II, LLC	LANCASTER , PA
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings II, LLC	YORK, PA
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings III,LLC	BALTIMORE CITY, MD
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings III,LLC	BALTIMORE CITY, MD
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings III,LLC	BALTIMORE CITY, MD
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Fixed Wireless Holdings, LLC	LANCASTER , PA
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Fixed Wireless Holdings, LLC	YORK, PA
Comcast	WCS	Broadband; Fixed Wireless	2310 - 2315	Comcast WCS ME04, Inc.	MEA004 - Philadelphia
Comcast	WCS	Broadband; Fixed Wireless	2315 - 2320	Comcast WCS ME04, Inc.	REA001 - Northeast
FOX TELEVISION STATIONS, INC.	Broadc ast Televisi on	Television	632 - 638	FOX TELEVISION STATIONS, INC.	BALTIMORE, MD
FOX TELEVISION STATIONS, INC.	Broadc ast Televisi on	Television	638 - 644	FOX TELEVISION STATIONS, INC.	PHILADELP HIA, PA
Globalstar Licensee LLC	MSS	Phone; Satellite	1610 - 1610.6 1610.6 - 1613.8	Globalstar Licensee LLC	Nationwide and Globally
HITN Spectrum, LLC	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	HITN Spectrum, LLC	BALTIMORE CITY, MD
Horizon Wi-Com	WCS	Broadband; Fixed Wireless	2305 - 2310	Horizon Wi-Com LLC	MEA004 - Philadelphia
INDEPENDENCE PUBLIC MEDIA OF PHILADELPHIA, INC.	Broadc ast Televisi on	Television	596 - 602	INDEPENDENCE PUBLIC MEDIA OF PHILADELPHIA, INC.	PHILADELP HIA, PA
ION MEDIA PHILADELPHIA LICENSE, INC.	Broadc ast Televisi on	Television	572 - 578	ION MEDIA PHILADELPHIA LICENSE, INC.	WILMINGTO N, DE

Inmarsat plc	MSS	Phone; Satellite	1525 - 1535	Inmarsat plc	Nationwide and Globally
Inmarsat plc	MSS	Phone; Satellite	1525 - 1535	Inmarsat plc	Nationwide and Globally
Intelsat North America LLC	MSS	Phone; Satellite	1535 - 1559	Intelsat North America LLC	Nationwide and Globally
			1626.5 - 1660		
Iridium Constellation LLC	MSS	Phone; Satellite	1613.8 - 1626.5	Iridium Constellation LLC	Nationwide and Globally
Leap	AWS - 1	Broadband; Fixed Wireless; Phone	1710 - 1720	Cricket License Company, LLC	CMA069 - Wilmington, DE-NJ-MD
LightSquared	MSS	Phone; Satellite	1525 - 1535	LightSquared Subsidiary LLC	Nationwide and Globally
			1535 - 1559		
MARYLAND PUBLIC BROADCASTING COMMISSION	Broadcast Television	Television	638 - 644	MARYLAND PUBLIC BROADCASTING COMMISSION	ANNAPOLIS, MD
MARYLAND PUBLIC BROADCASTING COMMISSION	Broadcast Television	Television	560 - 566	MARYLAND PUBLIC BROADCASTING COMMISSION	BALTIMORE, MD
MARYLAND STATE DEPART OF EDUCATION	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	MARYLAND STATE DEPART OF EDUCATION	BALTIMORE CITY, MD
MSV International, LLC	MSS	Phone; Satellite	1525 - 1535	MSV International, LLC	Nationwide and Globally
MetroPCS	AWS - 1	Broadband; Fixed Wireless; Phone	1735 - 1740	MetroPCS AWS, LLC	REA001 - Northeast
NBC TELEMUNDO LICENSE LLC	Broadcast Television	Television	590 - 596	NBC TELEMUNDO LICENSE LLC	PHILADELPHIA, PA
NEW JERSEY PUBLIC BROADCASTING AUTHORITY	Broadcast Television	Television	518 - 524	NEW JERSEY PUBLIC BROADCASTING AUTHORITY	CAMDEN, NJ
NEWPORT TELEVISION LICENSE LLC	Broadcast Television	Television	512 - 518	NEWPORT TELEVISION LICENSE LLC	HARRISBURG, PA
NEXSTAR BROADCASTING, INC.	Broadcast Television	Television	524 - 530	NEXSTAR BROADCASTING, INC.	LANCASTER, PA
NRJ TV PHILLY OPCO, LLC	Broadcast Television	Television	536 - 542	NRJ TV PHILLY OPCO, LLC	READING, PA
New DBSD Satellite Services G.P., Debtor-in-Possession	MSS	Phone; Satellite	2000 - 2020	New DBSD Satellite Services G.P., Debtor-in-	Nationwide and Globally

				Possession	
Nextwave	WCS	Broadband; Fixed Wireless	2345 - 2350	WCS Wireless License Subsidiary, LLC	REA001 - Northeast
North American Catholic Educational Programming Foundation, Inc.	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	North American Catholic Educational Programming Foundation, Inc.	LANCASTER, PA
North American Catholic Educational Programming Foundation, Inc.	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	North American Catholic Educational Programming Foundation, Inc.	YORK, PA
PHILADELPHIA TELEVISION STATION WPSG, INC.	Broadcast Television	Television	578 - 584	PHILADELPHIA TELEVISION STATION WPSG, INC.	PHILADELPHIA, PA
Pegasus Guard Band, LLC Debtor-In-Possession	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	757 - 758	Pegasus Guard Band, LLC Debtor-In-Possession	MEA004 - Philadelphia
RED LION BROADCASTING COMPANY, INC.	Broadcast Television	Television	566 - 572	RED LION BROADCASTING COMPANY, INC.	RED LION, PA
SCRIPPS MEDIA, INC.	Broadcast Television	Television	614 - 620	SCRIPPS MEDIA, INC.	BALTIMORE, MD
SINCLAIR BROADCAST GROUP, INC.	Broadcast Television	Television	662 - 668	SINCLAIR BROADCAST GROUP, INC.	BALTIMORE, MD
SpectrumCoAWS	AWS - 1	Broadband; Fixed Wireless; Phone	1720 - 1730	SpectrumCo LLC	BEA012 - Phil.-Atl. City PA-NJ-DE-MD
Sprint Nextel	Broadband and PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1910 - 1915	Nextel Communications of the Mid-Atlantic, Inc.	BEA012 - Phil.-Atl. City PA-NJ-DE-MD
Sprint Nextel	Broadband and PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1870 - 1885	PHILLIECO, L.P.	MTA009 - Philadelphia
T-Mobile	AWS - 1	Broadband; Fixed Wireless; Phone	1730 - 1735	T-Mobile License LLC	BEA012 - Phil.-Atl. City PA-NJ-DE-MD
T-Mobile	AWS - 1	Broadband; Fixed Wireless; Phone	1740 - 1745	T-Mobile License LLC	REA001 - Northeast
T-Mobile	Broadband and PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1895 - 1910	Cook Inlet GSM IV PCS Holdings, LLC	BTA346 - Philadelphia, PA-

					Wilmington DE
T-Mobile	Broadband and PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1895 - 1910	T-Mobile License LLC	BTA346 - Philadelphia, PA- Wilmington DE
TRIBUNE TELEVISION COMPANY, DEBTOR-IN-POSSESSION	Broadcast Television	Television	488 - 494	TRIBUNE TELEVISION COMPANY, DEBTOR-IN-POSSESSION	PHILADELPHIA, PA
TRIBUNE TELEVISION COMPANY, DEBTOR-IN-POSSESSION	Broadcast Television	Television	668 - 674	TRIBUNE TELEVISION COMPANY, DEBTOR-IN-POSSESSION	YORK, PA
TRINITY CHRISTIAN CENTER OF SANTA ANA, INC.	Broadcast Television	Television	548 - 554	TRINITY CHRISTIAN CENTER OF SANTA ANA, INC.	BURLINGTON, NJ
TerreStar License Inc., Debtor-in-Possession	MSS	Phone; Satellite	2000 - 2020	TerreStar License Inc., Debtor-in-Possession	Nationwide and Globally
The Source For Learning, Inc.	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	The Source For Learning, Inc.	BALTIMORE CITY, MD
UNIVERSITY OF MARYLAND	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	UNIVERSITY OF MARYLAND	BALTIMORE CITY, MD
UNIVERSITY OF MARYLAND COLLEGE PARK	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	UNIVERSITY OF MARYLAND COLLEGE PARK	BALTIMORE CITY, MD
UNIVERSITY OF MARYLAND, COLLEGE PARK	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	UNIVERSITY OF MARYLAND, COLLEGE PARK	BALTIMORE CITY, MD
Verizon Wireless	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	698 - 704	Cellco Partnership	BEA012 - Phil.-Atl. City PA-NJ-DE-MD
Verizon Wireless	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	746 - 757	Cellco Partnership	REA001 - Northeast
Verizon Wireless	AWS - 1	Broadband; Fixed Wireless; Phone	1745 - 1755	Cellco Partnership	REA001 - Northeast
Verizon Wireless	Broadband and PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1885 - 1890	Cellco Partnership	BTA346 - Philadelphia, PA- Wilmington DE
			1965 - 1970		
Verizon Wireless	Broadband and PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1890 - 1895	Cellco Partnership	BTA346 - Philadelphia, PA- Wilmington

					DE
Verizon Wireless	Broadband and PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1890 - 1895	Verizon Wireless Telecom Inc.	BTA346 - Philadelphia, PA-Wilmington DE
Verizon Wireless	Cellular	Broadband; Fixed Wireless; Mobile Radio; Phone	835 - 845	Cellco Partnership	CMA069 - Wilmington, DE-NJ-MD
			846.5 - 849		
WHYY, INC.	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	WHYY, INC.	NEW CASTLE, DE
WITF, INC	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	WITF, INC	LANCASTER, PA
WITF, INC	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	WITF, INC	YORK, PA
WITF, INC.	Broadcast Television	Television	602 - 608	WITF, INC.	HARRISBURG, PA

Table 58: Spectrum Licenses Information for Kent County

Common Name	Radio Service	Tags	Frequency Band (MHz)	Licensee/Lessee Name	Market
AT&T	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	710 - 716	AT&T MOBILITY II LLC	CMA468 - Maryland 2 - Kent
AT&T	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	704 - 710	AT&T Mobility Spectrum LLC	CMA468 - Maryland 2 - Kent
AT&T	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	716 - 722	AT&T Mobility Spectrum LLC	EAG702 - Mid-Atlantic
AT&T	AWS - 1	Broadband; Fixed Wireless; Phone	1730 - 1735	AT&T Mobility Spectrum LLC	BEA013 - Wash.-Balt. DC-MD-VA-WV-PA
AT&T	Broadband PCS	Broadband; Fixed Wireless;	1895 - 1910	NEW CINGULAR WIRELESS PCS, LLC	BTA029 - Baltimore, MD

			Mobile Radio; Phone			
AT&T	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1870 - 1885	New Cingular Wireless PCS, LLC	MTA010 - Washington- Baltimore	
AT&T	Cellular	Broadband; Fixed Wireless; Mobile Radio; Phone	824 - 835	NEW CINGULAR WIRELESS PCS, LLC	CMA468 - Maryland 2 - Kent	
			845 - 846.5			
AT&T	WCS	Broadband; Fixed Wireless	2315 - 2320	BellSouth Mobile Data, Inc.	REA002 - Southeast	
AT&T	WCS	Broadband; Fixed Wireless	2345 - 2350	BellSouth Mobile Data, Inc.	REA002 - Southeast	
BALTIMORE (WNUV-TV) LICENSEE, INC.	Broadcast Television	Television	626 - 632	BALTIMORE (WNUV-TV) LICENSEE, INC.	BALTIMORE, MD	
BALTIMORE WIRELESS CABLE TV, INC.	BRS	Broadband; Fixed Wireless; Phone; Television	2496 - 2690	BALTIMORE WIRELESS CABLE TV, INC.	Baltimore, MD	
CBS BROADCASTING INC.	Broadcast Television	Television	542 - 548	CBS BROADCASTING INC.	PHILADELPHIA, PA	
Clearwire	BRS	Broadband; Fixed Wireless; Phone; Television	2496 - 2690	NSAC, LLC	BTA029 - Baltimore, MD	
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings II, LLC	BALTIMORE CITY, MD	
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings II, LLC	BALTIMORE CITY, MD	
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings II, LLC	BALTIMORE CITY, MD	
Clearwire	EBS	Broadband; Fixed	2496 - 2690	Clearwire Spectrum Holdings III, LLC	ANNE ARUNDEL,	

		Wireless; Television				MD
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings III,LLC		BALTIMORE CITY, MD
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings III,LLC		BALTIMORE CITY, MD
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings III,LLC		BALTIMORE CITY, MD
Comcast	WCS	Broadband; Fixed Wireless	2310 - 2315	Comcast WCS ME05, Inc.		MEA005 - Washington
DELMARVA BROADCAST SERVICE, LLC	Broadcast Television	Television	668 - 674	DELMARVA BROADCAST SERVICE, LLC		SALISBURY, MD
Dominion 700, Inc.	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	757 - 758	Dominion 700, Inc.		MEA005 - Washington
Echostar	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	722 - 728	Manifest Wireless L.L.C.		BEA013 - Wash.-Balt. DC- MD-VA-WV- PA
FOX TELEVISION STATIONS, INC.	Broadcast Television	Television	632 - 638	FOX TELEVISION STATIONS, INC.		BALTIMORE, MD
FOX TELEVISION STATIONS, INC.	Broadcast Television	Television	596 - 602	FOX TELEVISION STATIONS, INC.		WASHINGTON , DC
FOX TELEVISION STATIONS, INC.	Broadcast Television	Television	602 - 608	FOX TELEVISION STATIONS, INC.		WASHINGTON , DC
GREATER WASHINGTON EDUCATIONAL TELECOMMUNICATIO NS ASSOC	Broadcast Television	Television	548 - 554	GREATER WASHINGTON EDUCATIONAL TELECOMMUNICATIO NS ASSOC		WASHINGTON , DC
Globalstar Licensee LLC	MSS	Phone; Satellite	1610 - 1610.6 1610.6 -	Globalstar Licensee LLC		Nationwide and Globally

			1613.8		
HITN Spectrum, LLC	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	HITN Spectrum, LLC	BALTIMORE CITY, MD
HOWARD UNIVERSITY TELEVISION	Broadcast Television	Television	584 - 590	HOWARD UNIVERSITY TELEVISION	WASHINGTON, DC
Horizon Wi-Com	WCS	Broadband; Fixed Wireless	2305 - 2310	Horizon Wi-Com LLC	MEA005 - Washington
INDEPENDENCE PUBLIC MEDIA OF PHILADELPHIA, INC.	Broadcast Television	Television	596 - 602	INDEPENDENCE PUBLIC MEDIA OF PHILADELPHIA, INC.	PHILADELPHIA, PA
ION MEDIA PHILADELPHIA LICENSE, INC.	Broadcast Television	Television	572 - 578	ION MEDIA PHILADELPHIA LICENSE, INC.	WILMINGTON, DE
ION MEDIA WASHINGTON LICENSE, INC	Broadcast Television	Television	590 - 596	ION MEDIA WASHINGTON LICENSE, INC	MANASSAS, VA
Inmarsat plc	MSS	Phone; Satellite	1525 - 1535	Inmarsat plc	Nationwide and Globally
			1535 - 1559		
Inmarsat plc	MSS	Phone; Satellite	1525 - 1535	Inmarsat plc	Nationwide and Globally
			1535 - 1559		
Intelsat North America LLC	MSS	Phone; Satellite	1535 - 1559	Intelsat North America LLC	Nationwide and Globally
Iridium Constellation LLC	MSS	Phone; Satellite	1613.8 - 1626.5	Iridium Constellation LLC	Nationwide and Globally
Leap	AWS - 1	Broadband; Fixed Wireless; Phone	1710 - 1720	Cricket License Company, LLC	CMA468 - Maryland 2 - Kent
LightSquared	MSS	Phone; Satellite	1525 - 1535	LightSquared Subsidiary LLC	Nationwide and Globally
MARYLAND PUBLIC BROADCASTING COMMISSION	Broadcast Television	Television	638 - 644	MARYLAND PUBLIC BROADCASTING COMMISSION	ANNAPOLIS, MD
MARYLAND PUBLIC BROADCASTING COMMISSION	Broadcast Television	Television	560 - 566	MARYLAND PUBLIC BROADCASTING COMMISSION	BALTIMORE, MD
MARYLAND STATE DEPART OF EDUCATION	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	MARYLAND STATE DEPART OF EDUCATION	BALTIMORE CITY, MD

MSV International, LLC	MSS	Phone; Satellite	1525 - 1535	MSV International, LLC	Nationwide and Globally
			1535 - 1559		
NBC TELEMUNDO LICENSE LLC	Broadcas t Televisio n	Television	590 - 596	NBC TELEMUNDO LICENSE LLC	PHILADELPHI A, PA
NBC TELEMUNDO LICENSE LLC	Broadcas t Televisio n	Television	674 - 680	NBC TELEMUNDO LICENSE LLC	WASHINGTON , DC
New DBSD Satellite Services G.P., Debtor-in- Possession	MSS	Phone; Satellite	2000 - 2020	New DBSD Satellite Services G.P., Debtor-in- Possession	Nationwide and Globally
PHILADELPHIA TELEVISION STATION WPSG, INC.	Broadcas t Televisio n	Television	578 - 584	PHILADELPHIA TELEVISION STATION WPSG, INC.	PHILADELPHI A, PA
RED LION BROADCASTING COMPANY, INC.	Broadcas t Televisio n	Television	566 - 572	RED LION BROADCASTING COMPANY, INC.	RED LION, PA
SCRIPPS MEDIA, INC.	Broadcas t Televisio n	Television	614 - 620	SCRIPPS MEDIA, INC.	BALTIMORE, MD
SINCLAIR BROADCAST GROUP, INC.	Broadcas t Televisio n	Television	662 - 668	SINCLAIR BROADCAST GROUP, INC.	BALTIMORE, MD
SpectrumCoAWS	AWS - 1	Broadban d; Fixed Wireless; Phone	1720 - 1730	SpectrumCo LLC	BEA013 - Wash.-Balt. DC- MD-VA-WV- PA
Sprint Nextel	Broadban d PCS	Broadban d; Fixed Wireless; Mobile Radio; Phone	1850 - 1865	APC PCS, LLC.	MTA010 - Washington- Baltimore
Sprint Nextel	Broadban d PCS	Broadban d; Fixed Wireless; Mobile Radio; Phone	1910 - 1915	Nextel Communications of the Mid-Atlantic, Inc.	BEA013 - Wash.-Balt. DC- MD-VA-WV- PA
T-Mobile	AWS - 1	Broadban d; Fixed Wireless; Phone	1735 - 1740	T-Mobile License LLC	REA002 - Southeast
T-Mobile	AWS - 1	Broadban d; Fixed Wireless; Phone	1740 - 1745	T-Mobile License LLC	REA002 - Southeast

T-Mobile	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1890 - 1895	T-Mobile License LLC	BTA029 - Baltimore, MD
T-Mobile	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1885 - 1890	T-Mobile License LLC	BTA029 - Baltimore, MD
T-Mobile	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1885 - 1890	T-Mobile License LLC	BTA029 - Baltimore, MD
T-Mobile	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1850 - 1865	T-Mobile License LLC	MTA010 - Washington-Baltimore
T-Mobile	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1850 - 1865	T-Mobile License LLC	MTA010 - Washington-Baltimore
TELEFUTURA D.C. LLC	Broadcast Television	Television	476 - 482	TELEFUTURA D.C. LLC	ARLINGTON, VA
TRIBUNE TELEVISION COMPANY, DEBTOR-IN-POSSESSION	Broadcast Television	Television	488 - 494	TRIBUNE TELEVISION COMPANY, DEBTOR-IN-POSSESSION	PHILADELPHIA, PA
TRIBUNE TELEVISION COMPANY, DEBTOR-IN-POSSESSION	Broadcast Television	Television	668 - 674	TRIBUNE TELEVISION COMPANY, DEBTOR-IN-POSSESSION	YORK, PA
TerreStar License Inc., Debtor-in-Possession	MSS	Phone; Satellite	2000 - 2020	TerreStar License Inc., Debtor-in-Possession	Nationwide and Globally
The Source For Learning, Inc.	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	The Source For Learning, Inc.	BALTIMORE CITY, MD
UNIVERSITY OF MARYLAND	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	UNIVERSITY OF MARYLAND	BALTIMORE CITY, MD
UNIVERSITY OF MARYLAND COLLEGE PARK	EBS	Broadband; Fixed Wireless;	2496 - 2690	UNIVERSITY OF MARYLAND COLLEGE PARK	BALTIMORE CITY, MD

		Television			
UNIVERSITY OF MARYLAND, COLLEGE PARK	EBS	Broadband; Fixed; Wireless; Television	2496 - 2690	UNIVERSITY OF MARYLAND, COLLEGE PARK	ANNE ARUNDEL, MD
UNIVERSITY OF MARYLAND, COLLEGE PARK	EBS	Broadband; Fixed; Wireless; Television	2496 - 2690	UNIVERSITY OF MARYLAND, COLLEGE PARK	BALTIMORE CITY, MD
Verizon Wireless	700 MHz	Broadband; Fixed; Wireless; Mobile Radio; Phone; Television	698 - 704	Cellco Partnership	BEA013 - Wash.-Balt. DC-MD-VA-WV-PA
Verizon Wireless	700 MHz	Broadband; Fixed; Wireless; Mobile Radio; Phone; Television	746 - 757	Cellco Partnership	REA002 - Southeast
Verizon Wireless	AWS - 1	Broadband; Fixed; Wireless; Phone	1745 - 1755	Cellco Partnership	REA002 - Southeast
Verizon Wireless	Broadband PCS	Broadband; Fixed; Wireless; Mobile Radio; Phone	1865 - 1870	Cellco Partnership	BTA029 - Baltimore, MD
Verizon Wireless	Broadband PCS	Broadband; Fixed; Wireless; Mobile Radio; Phone	1895 - 1910	Cellco Partnership	BTA029 - Baltimore, MD
Verizon Wireless	Broadband PCS	Broadband; Fixed; Wireless; Mobile Radio; Phone	1895 - 1910	Verizon Wireless Telecom Inc.	BTA029 - Baltimore, MD
Verizon Wireless	Cellular	Broadband; Fixed; Wireless; Mobile Radio; Phone	835 - 845	Cellco Partnership	CMA468 - Maryland 2 - Kent
WBOC, INC.	Broadcast Television	Television	512 - 518	WBOC, INC.	SALISBURY, MD

WDCW BROADCASTING, INC., DEBTOR-IN-POSSESSION	Broadcast Television	Television	686 - 692	WDCW BROADCASTING, INC., DEBTOR-IN-POSSESSION	WASHINGTON, DC
WHYY, INC.	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	WHYY, INC.	NEW CASTLE, DE

Table 59: Spectrum Licenses Information for Talbot County

Common Name	Radio Service	Tags	Frequency Band (MHz)	Licensee/Lessee Name	Market
AT&T	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	710 - 716	AT&T MOBILITY II LLC	CMA468 - Maryland 2 - Kent
			740 - 746		
AT&T	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	704 - 710	AT&T Mobility Spectrum LLC	CMA468 - Maryland 2 - Kent
			734 - 740		
AT&T	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	716 - 722	AT&T Mobility Spectrum LLC	EAG702 - Mid-Atlantic
AT&T	AWS - 1	Broadband; Fixed Wireless; Phone	1730 - 1735	AT&T Mobility Spectrum LLC	BEA013 - Wash.-Balt. DC-MD-VA-WV-PA
			2130 - 2135		
AT&T	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1895 - 1910	NEW CINGULAR WIRELESS PCS, LLC	BTA029 - Baltimore, MD
			1975 - 1990		
AT&T	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1870 - 1885	New Cingular Wireless PCS, LLC	MTA010 - Washington-Baltimore
			1950 - 1965		
AT&T	Cellular	Broadband; Fixed Wireless; Mobile Radio;	824 - 835	NEW CINGULAR WIRELESS PCS, LLC	CMA468 - Maryland 2 - Kent

Phone					
845 - 846.5					
869 - 880					
890 - 891.5					
AT&T	WCS	Broadband; Fixed Wireless	2315 - 2320	BellSouth Mobile Data, Inc.	REA002 - Southeast
AT&T	WCS	Broadband; Fixed Wireless	2345 - 2350	BellSouth Mobile Data, Inc.	REA002 - Southeast
BALTIMORE (WNUV-TV) LICENSEE, INC.	Broadcast Television	Television	626 - 632	BALTIMORE (WNUV-TV) LICENSEE, INC.	BALTIMORE, MD
Bloosurf, LLC	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Bloosurf, LLC	WICOMICO, MD
Bloosurf, LLC	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Bloosurf, LLC.	WICOMICO, MD
Bloosurf, LLC	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Bloosurf, LLC.	WICOMICO, MD
COMMONWEALTH PUBLIC BROADCASTING CORPORATION	Broadcast Television	Television	530 - 536	COMMONWEALTH PUBLIC BROADCASTING CORPORATION	FAIRFAX, VA
Clearwire	BRS	Broadband; Fixed Wireless; Phone; Television	2496 - 2690	NSAC, LLC	BTA029 - Baltimore, MD
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings III,LLC	ANNE ARUNDEL, MD
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings III,LLC	CHARLES, MD
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	NSAC, LLC	WICOMICO, MD
Comcast	WCS	Broadband; Fixed Wireless	2310 - 2315	Comcast WCS ME05, Inc.	MEA005 - Washington
2355 - 2360					
DELMARVA BROADCAST SERVICE, LLC	Broadcast Television	Television	668 - 674	DELMARVA BROADCAST SERVICE, LLC	SALISBURY, MD
Dominion 700, Inc.	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	757 - 758	Dominion 700, Inc.	MEA005 - Washington

			787 - 788		
EchoStar	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	722 - 728	Manifest Wireless L.L.C.	BEA013 - Wash.-Balt. DC-MD-VA- WV-PA
FOX TELEVISION STATIONS, INC.	Broadca st Televisi on	Television	632 - 638	FOX TELEVISION STATIONS, INC.	BALTIMOR E, MD
FOX TELEVISION STATIONS, INC.	Broadca st Televisi on	Television	596 - 602	FOX TELEVISION STATIONS, INC.	WASHINGT ON, DC
FOX TELEVISION STATIONS, INC.	Broadca st Televisi on	Television	602 - 608	FOX TELEVISION STATIONS, INC.	WASHINGT ON, DC
GREATER WASHINGTON EDUCATIONAL TELECOMMUNICATIONS ASSOC	Broadca st Televisi on	Television	548 - 554	GREATER WASHINGTON EDUCATIONAL TELECOMMUNICATIONS ASSOC	WASHINGT ON, DC
Globalstar Licensee LLC	MSS	Phone; Satellite	1610 - 1610.6	Globalstar Licensee LLC	Nationwide and Globally
			1610.6		
			- 1613.8		
			1613.8		
			- 1626.5		
			2483.5 - 2495		
			2495 - 2500		
HOWARD UNIVERSITY TELEVISION	Broadca st Televisi on	Television	584 - 590	HOWARD UNIVERSITY TELEVISION	WASHINGT ON, DC
Horizon Wi-Com	WCS	Broadband; Fixed Wireless	2305 - 2310	Horizon Wi-Com LLC	MEA005 - Washington
			2350 - 2355		
ION MEDIA WASHINGTON LICENSE, INC	Broadca st Televisi on	Television	590 - 596	ION MEDIA WASHINGTON LICENSE, INC	MANASSAS , VA
Inmarsat plc	MSS	Phone; Satellite	1525 - 1535	Inmarsat plc	Nationwide and Globally
			1535 - 1559		
			1626.5 - 1660		

Inmarsat plc	MSS	Phone; Satellite	1525 - 1535	Inmarsat plc	Nationwide and Globally
			1535 - 1559		
			1626.5 - 1660		
			1660 - 1660.5		
Intelsat North America LLC	MSS	Phone; Satellite	1535 - 1559	Intelsat North America LLC	Nationwide and Globally
			1626.5 - 1660		
Iridium Constellation LLC	MSS	Phone; Satellite	1613.8 -	Iridium Constellation LLC	Nationwide and Globally
			1626.5		
Leap	AWS - 1	Broadband; Fixed Wireless; Phone	1710 - 1720	Cricket License Company, LLC	CMA468 - Maryland 2 - Kent
			2110 - 2120		
LightSquared	MSS	Phone; Satellite	1525 - 1535	LightSquared Subsidiary LLC	Nationwide and Globally
			1535 - 1559		
			1626.5 - 1660		
			1660 - 1660.5		
MARYLAND PUBLIC BROADCASTING COMMISSION	Broadca st Televisi on	Television	638 - 644	MARYLAND PUBLIC BROADCASTING COMMISSION	ANNAPOLI S, MD
MARYLAND PUBLIC BROADCASTING COMMISSION	Broadca st Televisi on	Television	554 - 560	MARYLAND PUBLIC BROADCASTING COMMISSION	SALISBURY , MD
MSV International, LLC	MSS	Phone; Satellite	1525 - 1535	MSV International, LLC	Nationwide and Globally
			1535 - 1559		
			1626.5 - 1660		
			1660 - 1660.5		
NBC TELEMUNDO LICENSE LLC	Broadca st Televisi on	Television	674 - 680	NBC TELEMUNDO LICENSE LLC	WASHINGT ON, DC
New DBSD Satellite Services G.P., Debtor-in- Possession	MSS	Phone; Satellite	2000 - 2020	New DBSD Satellite Services G.P., Debtor-in- Possession	Nationwide and Globally
			2180 - 2200		

SALISBURY UNIVERSITY, FORMERLY SALISBURY STATE UNIVERSITY	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	SALISBURY UNIVERSITY, FORMERLY SALISBURY STATE UNIVERSITY	WICOMICO, MD
SCRIPPS MEDIA, INC.	Broadcast Television	Television	614 - 620	SCRIPPS MEDIA, INC.	BALTIMORE, MD
SINCLAIR BROADCAST GROUP, INC.	Broadcast Television	Television	662 - 668	SINCLAIR BROADCAST GROUP, INC.	BALTIMORE, MD
SpectrumCoAWS	AWS - 1	Broadband; Fixed Wireless; Phone	1720 - 1730	SpectrumCo LLC	BEA013 - Wash.-Balt. DC-MD-VA-WV-PA
			2120 - 2130		
Sprint Nextel	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1850 - 1865	APC PCS, LLC.	MTA010 - Washington-Baltimore
			1930 - 1945		
Sprint Nextel	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1910 - 1915	Nextel Communications of the Mid-Atlantic, Inc.	BEA013 - Wash.-Balt. DC-MD-VA-WV-PA
			1990 - 1995		
T-Mobile	AWS - 1	Broadband; Fixed Wireless; Phone	1735 - 1740	T-Mobile License LLC	REA002 - Southeast
			2135 - 2140		
T-Mobile	AWS - 1	Broadband; Fixed Wireless; Phone	1740 - 1745	T-Mobile License LLC	REA002 - Southeast
			2140 - 2145		
T-Mobile	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1890 - 1895	T-Mobile License LLC	BTA029 - Baltimore, MD
			1970 - 1975		
T-Mobile	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1885 - 1890	T-Mobile License LLC	BTA029 - Baltimore, MD
			1965 - 1970		
T-Mobile	Broadband PCS	Broadband;	1885 -	T-Mobile License LLC	BTA029 -

	nd PCS	Fixed Wireless; Mobile Radio; Phone	1890		Baltimore, MD
			1965 - 1970		
T-Mobile	Broadband nd PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1850 - 1865	T-Mobile License LLC	MTA010 - Washington- Baltimore
			1930 - 1945		
T-Mobile	Broadband nd PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1850 - 1865	T-Mobile License LLC	MTA010 - Washington- Baltimore
			1930 - 1945		
TELEFUTURA D.C. LLC	Broadcast Television	Television	476 - 482	TELEFUTURA D.C. LLC	ARLINGTON, VA
TerreStar License Inc., Debtor-in-Possession	MSS	Phone; Satellite	2000 - 2020	TerreStar License Inc., Debtor-in-Possession	Nationwide and Globally
			2180 - 2200		
UNIVERSITY OF MARYLAND COLLEGE PARK	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	UNIVERSITY OF MARYLAND COLLEGE PARK	CHARLES, MD
UNIVERSITY OF MARYLAND EASTERN SHORE	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	UNIVERSITY OF MARYLAND EASTERN SHORE	WICOMICO, MD
UNIVERSITY OF MARYLAND, COLLEGE PARK	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	UNIVERSITY OF MARYLAND, COLLEGE PARK	ANNE ARUNDEL, MD
Verizon Wireless	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	698 - 704	Cellco Partnership	BEA013 - Wash.-Balt. DC-MD-VA- WV-PA
			728 - 734		
Verizon Wireless	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	746 - 757	Cellco Partnership	REA002 - Southeast
			776 - 787		
Verizon Wireless	AWS - 1	Broadband; Fixed Wireless; Phone	1745 - 1755	Cellco Partnership	REA002 - Southeast
			2145 - 2155		
Verizon Wireless	Broadband	Broadband;	1865 -	Cellco Partnership	BTA029 -

	nd PCS	Fixed Wireless; Mobile Radio; Phone	1870		Baltimore, MD
			1945 - 1950		
Verizon Wireless	Broadband nd PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1895 - 1910	Cellco Partnership	BTA029 - Baltimore, MD
			1975 - 1990		
Verizon Wireless	Broadband nd PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1895 - 1910	Verizon Wireless Telecom Inc.	BTA029 - Baltimore, MD
			1975 - 1990		
Verizon Wireless	Cellular	Broadband; Fixed Wireless; Mobile Radio; Phone	835 - 845	Cellco Partnership	CMA468 - Maryland 2 - Kent
			846.5 - 849		
			880 - 890		
			891.5 - 894		
WBOC, INC.	Broadcast Television	Television	512 - 518	WBOC, INC.	SALISBURY , MD
WDCW BROADCASTING, INC., DEBTOR-IN- POSSESSION	Broadcast Television	Television	686 - 692	WDCW BROADCASTING, INC., DEBTOR-IN- POSSESSION	WASHINGTON, DC
WHYY, INC.	Broadcast Television	Television	650 - 656	WHYY, INC.	SEAFORD, DE
WOR-WIC COMMUNITY COLLEGE	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	WOR-WIC COMMUNITY COLLEGE	WICOMICO, MD

Table 60: Spectrum Licenses Information for Caroline County

Common Name	Radio Service	Tags	Frequency Band (MHz)	Licensee/Lessee Name	Market
AT&T	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	710 - 716	AT&T MOBILITY II LLC	CMA468 - Maryland 2 - Kent
AT&T	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	704 - 710	AT&T Mobility Spectrum LLC	CMA468 - Maryland 2 - Kent
AT&T	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	716 - 722	AT&T Mobility Spectrum LLC	EAG702 - Mid-Atlantic
AT&T	AWS - 1	Broadband; Fixed Wireless; Phone	1730 - 1735	AT&T Mobility Spectrum LLC	BEA013 - Wash.-Balt. DC-MD-VA-WV-PA
			2130 - 2135		
AT&T	Broadband	Broadband	1885 -	NEW CINGULAR WIRELESS	BTA116 -

	and PCS	nd; Fixed Wireles s; Mobile Radio; Phone	1890	PCS, LLC	Dover, DE
			1965 - 1970		
AT&T	Broadb and PCS	Broadba nd; Fixed Wireles s; Mobile Radio; Phone	1850 - 1865	NEW CINGULAR WIRELESS PCS, LLC	MTA009 - Philadelphia
AT&T	Broadb and PCS	Broadba nd; Fixed Wireles s; Mobile Radio; Phone	1865 - 1870	New Cingular Wireless PCS, LLC	BTA116 - Dover, DE
AT&T	Broadb and PCS	Broadba nd; Fixed Wireles s; Mobile Radio; Phone	1850 - 1865	New Cingular Wireless PCS, LLC	MTA009 - Philadelphia
AT&T	Cellular	Broadba nd; Fixed Wireles s; Mobile Radio; Phone	824 - 835	NEW CINGULAR WIRELESS PCS, LLC	CMA468 - Maryland 2 - Kent
AT&T	WCS	Broadba nd; Fixed Wireles s	2315 - 2320	BellSouth Mobile Data, Inc.	REA002 - Southeast

AT&T	WCS	Broadband; Fixed Wireless	2345 - 2350	BellSouth Mobile Data, Inc.	REA002 - Southeast
BALTIMORE (WNUV-TV) LICENSEE, INC.	Broadcast Television	Television	626 - 632	BALTIMORE (WNUV-TV) LICENSEE, INC.	BALTIMORE, MD
Bloosurf, LLC	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Bloosurf, LLC	WICOMICO, MD
Bloosurf, LLC	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Bloosurf, LLC.	WICOMICO, MD
Bloosurf, LLC	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Bloosurf, LLC.	WICOMICO, MD
Clearwire	BRS	Broadband; Fixed Wireless; Phone; Television	2496 - 2690	NSAC, LLC	BTA116 - Dover, DE
Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	Clearwire Spectrum Holdings III, LLC	ANNE ARUNDEL, MD

Clearwire	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	NSAC, LLC	WICOMICO, MD
Comcast	WCS	Broadband; Fixed Wireless	2310 - 2315	Comcast WCS ME05, Inc.	MEA005 - Washington
DELMARVA BROADCAST SERVICE, LLC	Broadcast Television	Television	668 - 674	DELMARVA BROADCAST SERVICE, LLC	SALISBURY, MD
Dominion 700, Inc.	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	757 - 758	Dominion 700, Inc.	MEA005 - Washington
Echostar	700 MHz	Broadband; Fixed Wireless; Mobile Radio; Phone; Television	722 - 728	Manifest Wireless L.L.C.	BEA013 - Wash.-Balt. DC- MD-VA-WV- PA
FOX TELEVISION STATIONS, INC.	Broadcast Television	Television	632 - 638	FOX TELEVISION STATIONS, INC.	BALTIMORE, MD
FOX TELEVISION STATIONS, INC.	Broadcast Television	Television	602 - 608	FOX TELEVISION STATIONS, INC.	WASHINGTON , DC
Globalstar Licensee LLC	MSS	Phone;	1610 -	Globalstar Licensee LLC	Nationwide and

		Satellite	1610.6		Globally
Horizon Wi-Com	WCS	Broadband; Fixed Wireless	2305 - 2310	Horizon Wi-Com LLC	MEA005 - Washington
Inmarsat plc	MSS	Phone; Satellite	1525 - 1535	Inmarsat plc	Nationwide and Globally
Inmarsat plc	MSS	Phone; Satellite	1525 - 1535	Inmarsat plc	Nationwide and Globally
Intelsat North America LLC	MSS	Phone; Satellite	1535 - 1559	Intelsat North America LLC	Nationwide and Globally
Iridium Constellation LLC	MSS	Phone; Satellite	1613.8 - 1626.5	Iridium Constellation LLC	Nationwide and Globally
Leap	AWS - 1	Broadband; Fixed Wireless; Phone	1710 - 1720	Cricket License Company, LLC	CMA468 - Maryland 2 - Kent
LightSquared	MSS	Phone; Satellite	1525 - 1535	LightSquared Subsidiary LLC	Nationwide and Globally
MARYLAND PUBLIC BROADCASTING COMMISSION	Broadcast Television	Television	638 - 644	MARYLAND PUBLIC BROADCASTING COMMISSION	ANNAPOLIS, MD
MARYLAND PUBLIC BROADCASTING COMMISSION	Broadcast Television	Television	554 - 560	MARYLAND PUBLIC BROADCASTING COMMISSION	SALISBURY, MD
MSV International, LLC	MSS	Phone; Satellite	1525 - 1535	MSV International, LLC	Nationwide and Globally
NBC TELEMUNDO LICENSE LLC	Broadcast Television	Television	674 - 680	NBC TELEMUNDO LICENSE LLC	WASHINGTON , DC
New DBSD Satellite Services G.P., Debtor-in-Possession	MSS	Phone; Satellite	2000 - 2020	New DBSD Satellite Services G.P., Debtor-in-Possession	Nationwide and Globally

SALISBURY UNIVERSITY, FORMERLY SALISBURY STATE UNIVERSITY	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	SALISBURY UNIVERSITY, FORMERLY SALISBURY STATE UNIVERSITY	WICOMICO, MD
SCRIPPS MEDIA, INC.	Broadcast Television	Television	614 - 620	SCRIPPS MEDIA, INC.	BALTIMORE, MD
SINCLAIR BROADCAST GROUP, INC.	Broadcast Television	Television	662 - 668	SINCLAIR BROADCAST GROUP, INC.	BALTIMORE, MD
SpectrumCoAWS	AWS - 1	Broadband; Fixed Wireless; Phone	1720 - 1730	SpectrumCo LLC	BEA013 - Wash.-Balt. DC-MD-VA-WV-PA
Sprint Nextel	BRS	Broadband; Fixed Wireless; Phone; Television	2496 - 2690	Sprint Communications Company, L.P.	BTA116 - Dover, DE
Sprint Nextel	BRS	Broadband; Fixed Wireless; Phone; Television	2496 - 2690	Sprint Communications Company, L.P.	BTA116 - Dover, DE
Sprint Nextel	Broadband PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1910 - 1915	Nextel Communications of the Mid-Atlantic, Inc.	BEA013 - Wash.-Balt. DC-MD-VA-WV-PA
Sprint Nextel	Broadband	Broadband	1870 -	PHILLIECO, L.P.	MTA009 -

	and PCS	nd; Fixed Wireles s; Mobile Radio; Phone	1885		Philadelphia
T-Mobile	AWS - 1	Broadba nd; Fixed Wireles s; Phone	1735 - 1740	T-Mobile License LLC	REA002 - Southeast
T-Mobile	AWS - 1	Broadba nd; Fixed Wireles s; Phone	1740 - 1745	T-Mobile License LLC	REA002 - Southeast
T-Mobile	Broadb and PCS	Broadba nd; Fixed Wireles s; Mobile Radio; Phone	1895 - 1910	Cook Inlet GSM IV PCS Holdings, LLC	BTA116 - Dover, DE
T-Mobile	Broadb and PCS	Broadba nd; Fixed Wireles s; Mobile Radio; Phone	1895 - 1910	T-Mobile License LLC	BTA116 - Dover, DE
TerreStar License Inc., Debtor-in-Possession	MSS	Phone; Satellite	2000 - 2020	TerreStar License Inc., Debtor- in-Possession	Nationwide and Globally
UNIVERSITY OF MARYLAND EASTERN SHORE	EBS	Broadba nd; Fixed Wireles s; Televisi on	2496 - 2690	UNIVERSITY OF MARYLAND EASTERN SHORE	WICOMICO, MD
UNIVERSITY OF MARYLAND, COLLEGE PARK	EBS	Broadba nd; Fixed Wireles	2496 - 2690	UNIVERSITY OF MARYLAND, COLLEGE PARK	ANNE ARUNDEL, MD

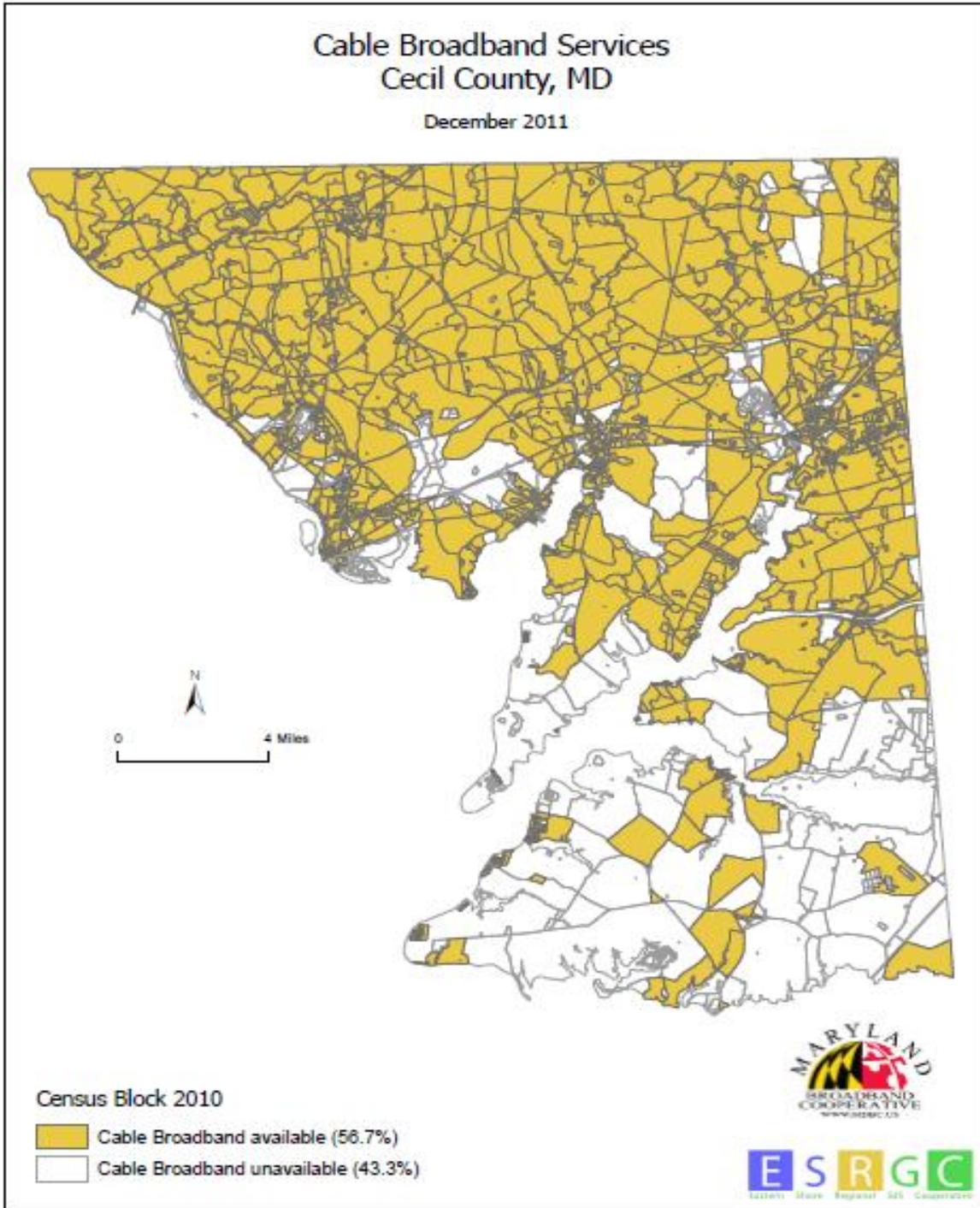
					S; Televisi on
Verizon Wireless	700 MHz	Broadba nd; Fixed Wireles s; Mobile Radio; Phone; Televisi on	698 - 704	Cellco Partnership	BEA013 - Wash.-Balt. DC- MD-VA-WV- PA
Verizon Wireless	700 MHz	Broadba nd; Fixed Wireles s; Mobile Radio; Phone; Televisi on	746 - 757	Cellco Partnership	REA002 - Southeast
Verizon Wireless	AWS - 1	Broadba nd; Fixed Wireles s; Phone	1745 - 1755	Cellco Partnership	REA002 - Southeast
Verizon Wireless	Broadb and PCS	Broadba nd; Fixed Wireles s; Mobile Radio; Phone	1890 - 1895	Cellco Partnership	BTA116 - Dover, DE
			1970 - 1975		
Verizon Wireless	Broadb and PCS	Broadba nd; Fixed Wireles s; Mobile Radio; Phone	1890 - 1895	Verizon Wireless Telecom Inc.	BTA116 - Dover, DE

Verizon Wireless	Broadband and PCS	Broadband; Fixed Wireless; Mobile Radio; Phone	1870 - 1885	Verizon Wireless Telecom Inc.	MTA009 - Philadelphia
Verizon Wireless	Cellular	Broadband; Fixed Wireless; Mobile Radio; Phone	835 - 845	Cellco Partnership	CMA468 - Maryland 2 - Kent
WBOC, INC.	Broadcast Television	Television	512 - 518	WBOC, INC.	SALISBURY, MD
			880 - 890		
WHYY, INC.	Broadcast Television	Television	650 - 656	WHYY, INC.	SEAFORD, DE
WOR-WIC COMMUNITY COLLEGE	EBS	Broadband; Fixed Wireless; Television	2496 - 2690	WOR-WIC COMMUNITY COLLEGE	WICOMICO, MD

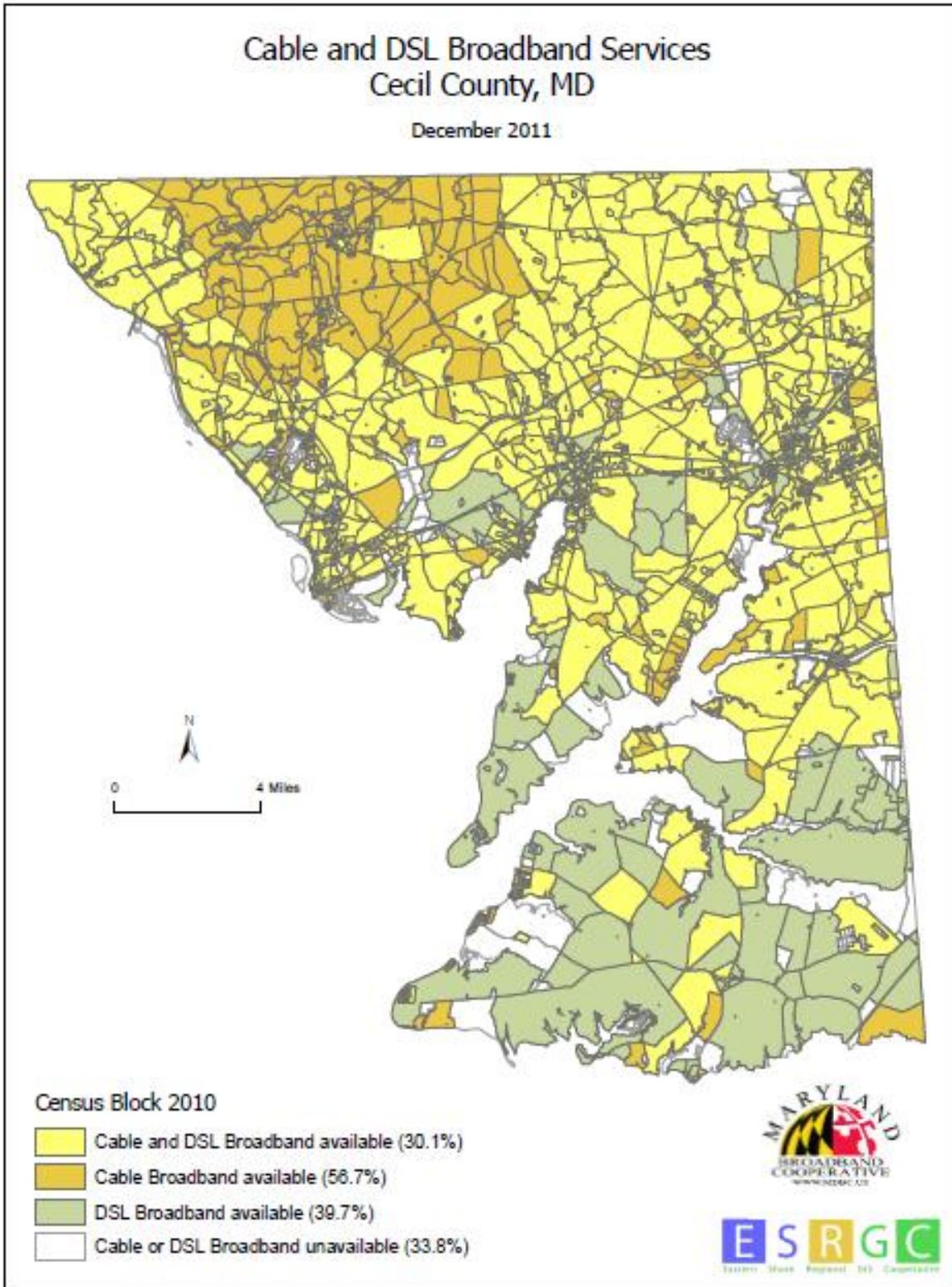
Appendix B: Maps

Broadband Maps for Upper Eastern Shore Region

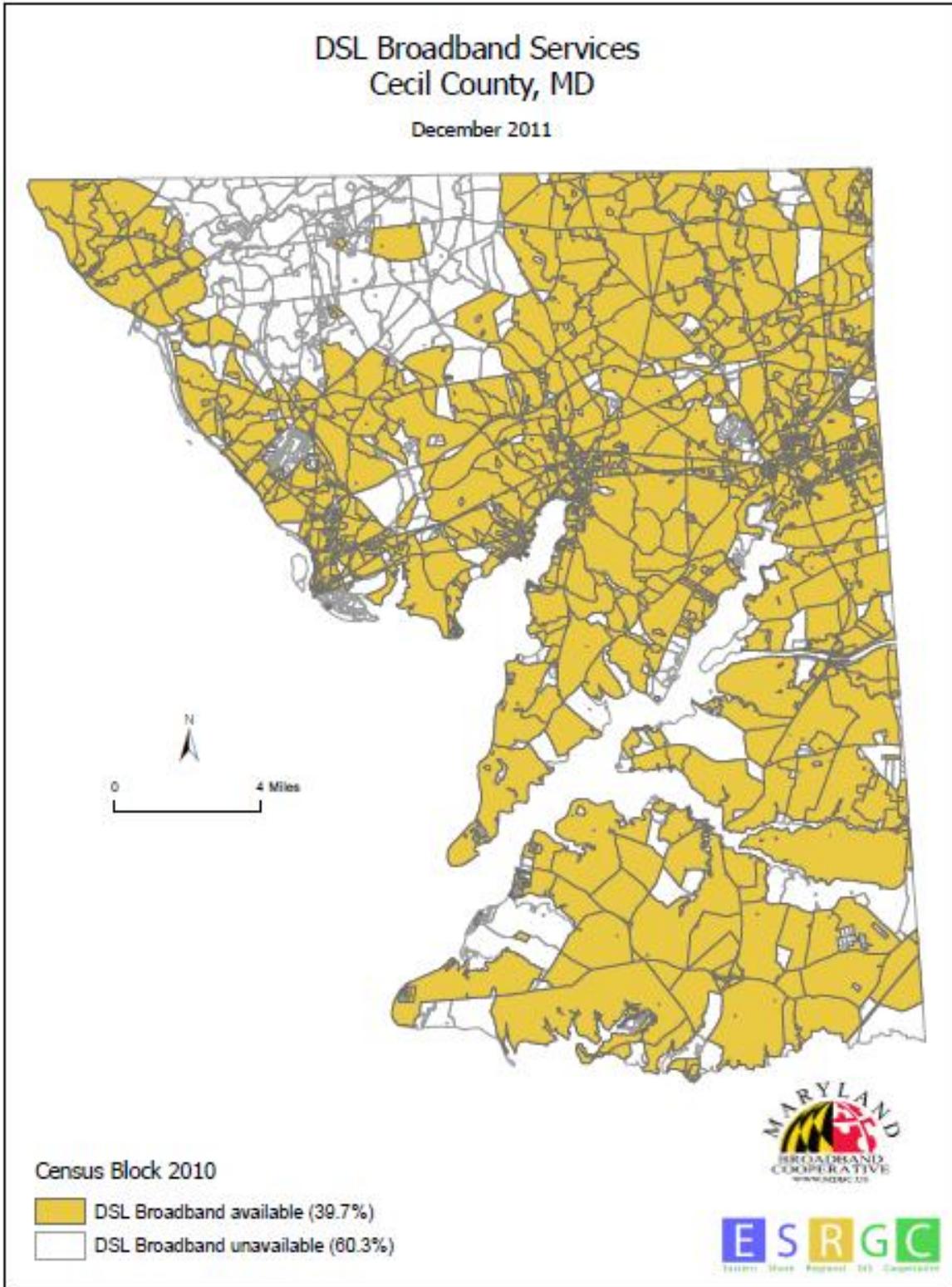
Map 1: Cecil County Cable Broadband Services



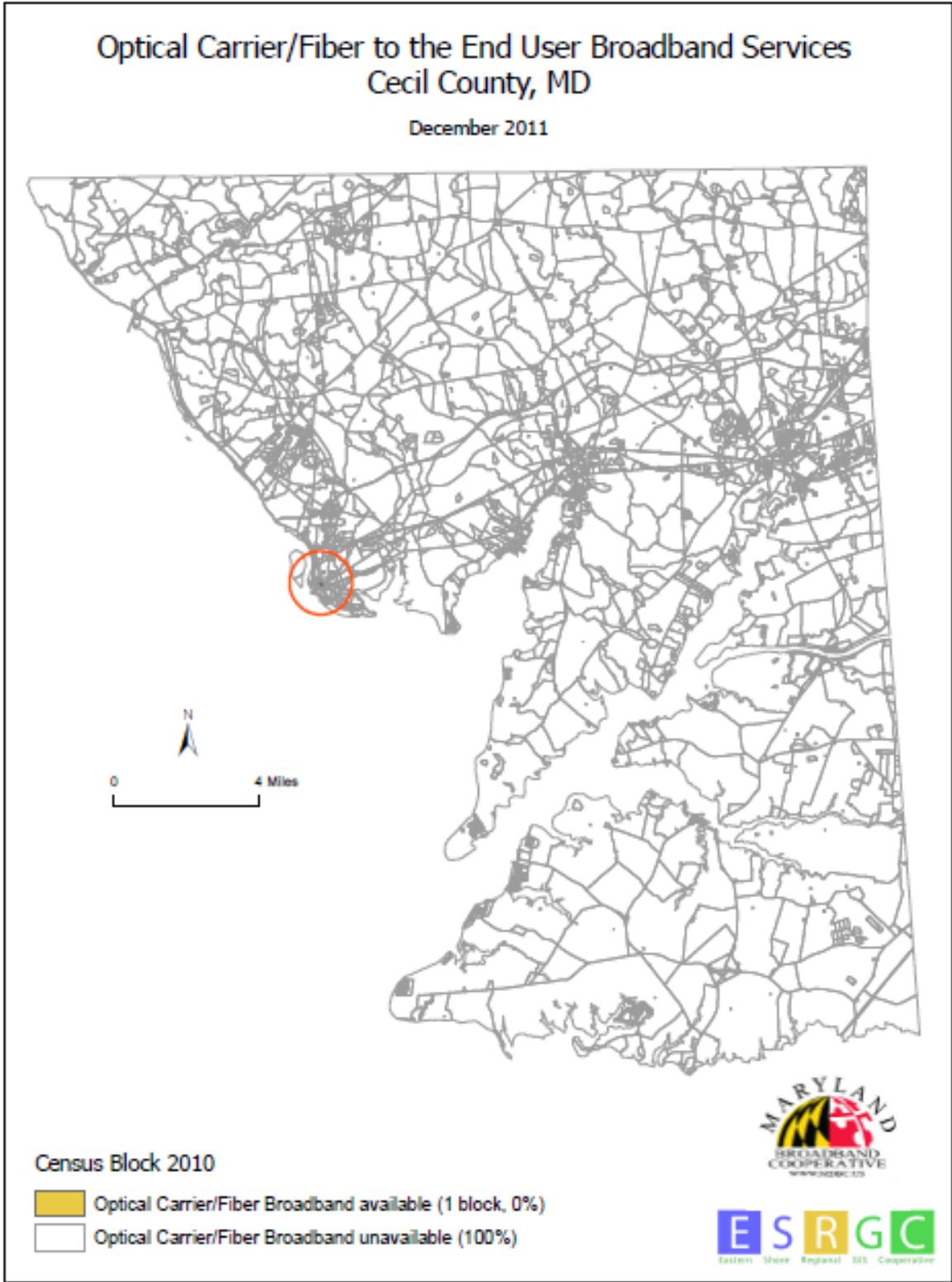
Map 2: Cecil County Cable and DSL Broadband Services



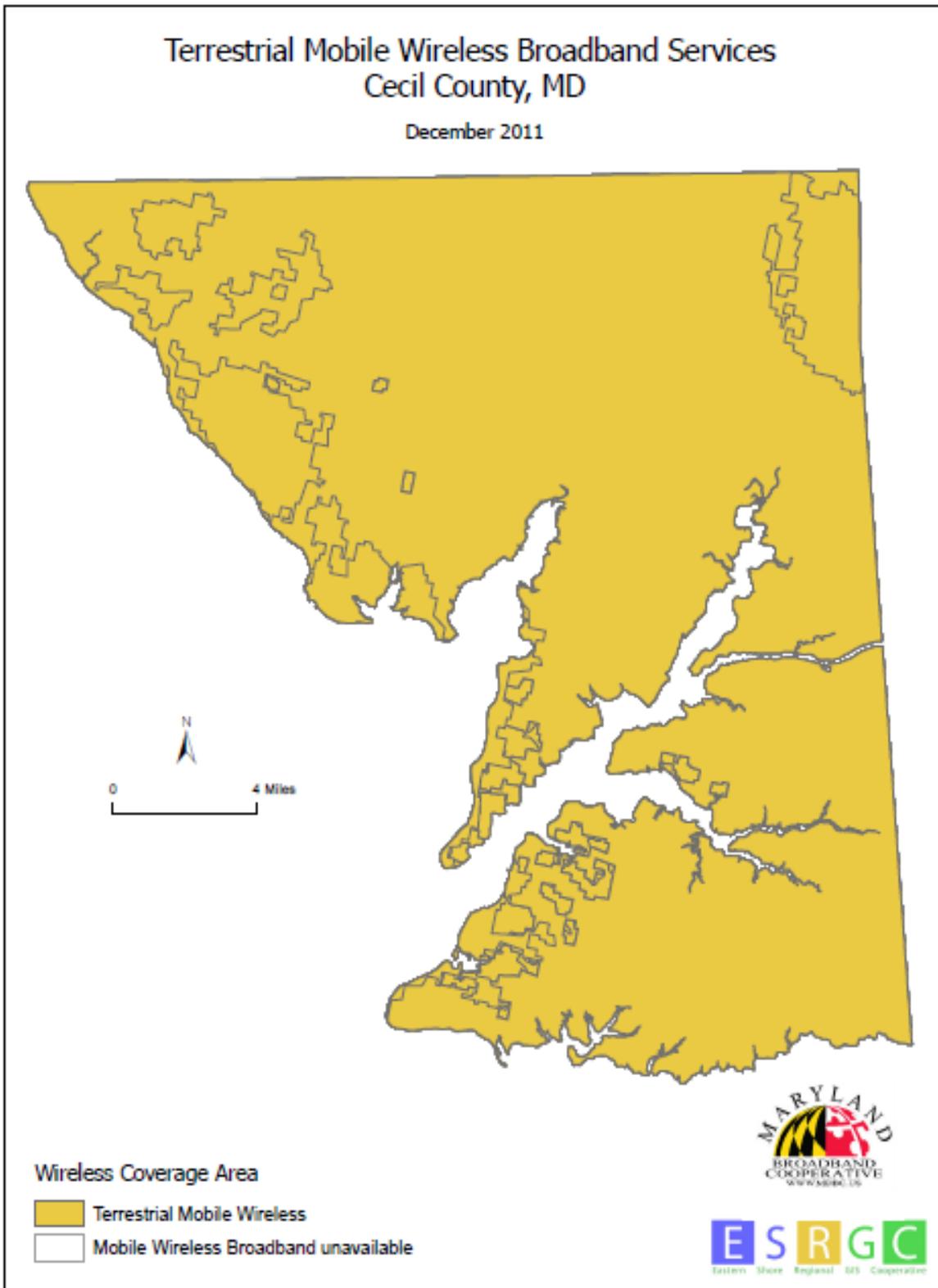
Map 3: Cecil County DSL Broadband Services



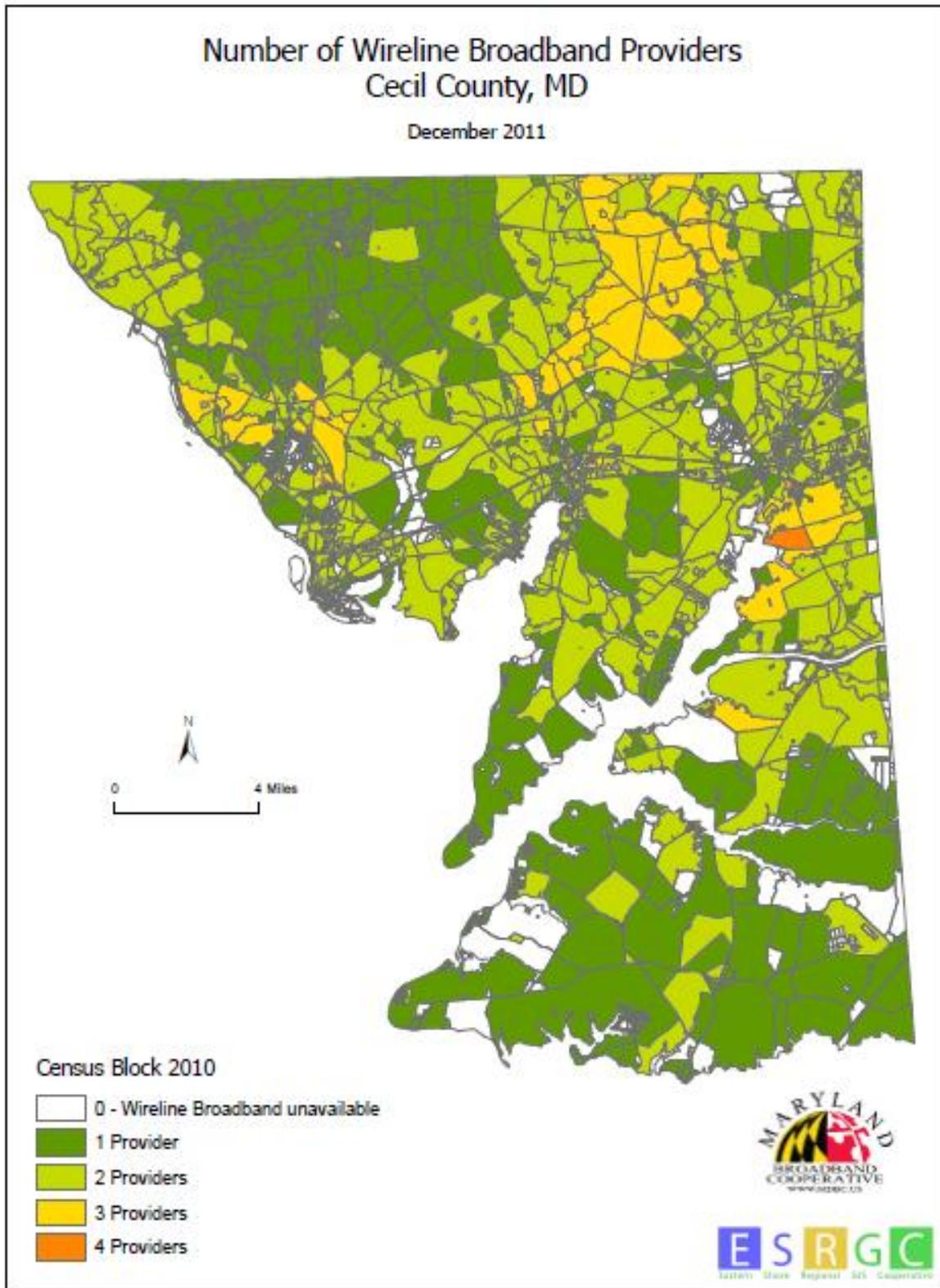
Map 4: Cecil County Optical Carrier/Fiber



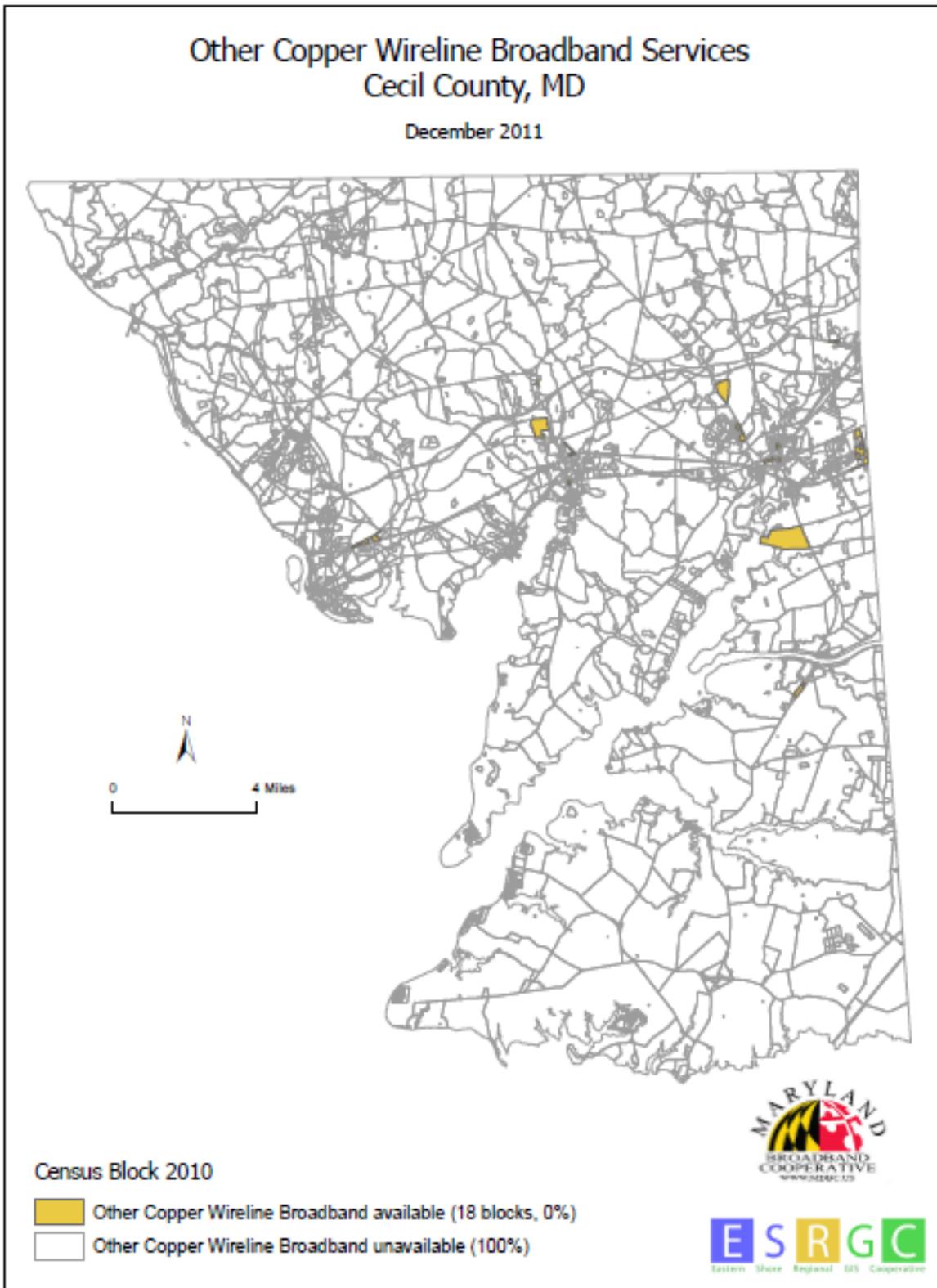
Map 5: Cecil County Terrestrial Mobile Wireless Broadband Services



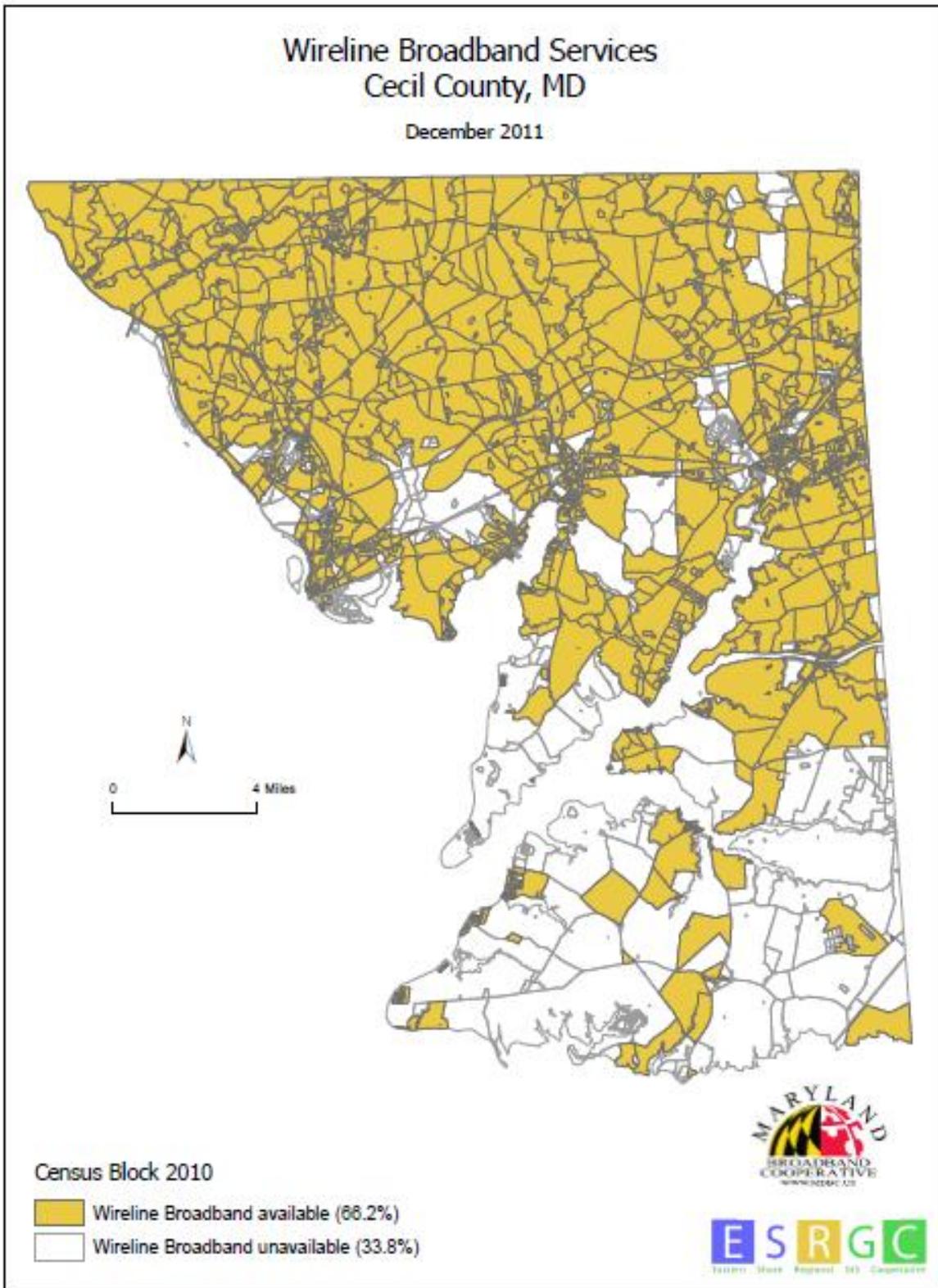
Map 6: Cecil County Number of Wireline Broadband Providers



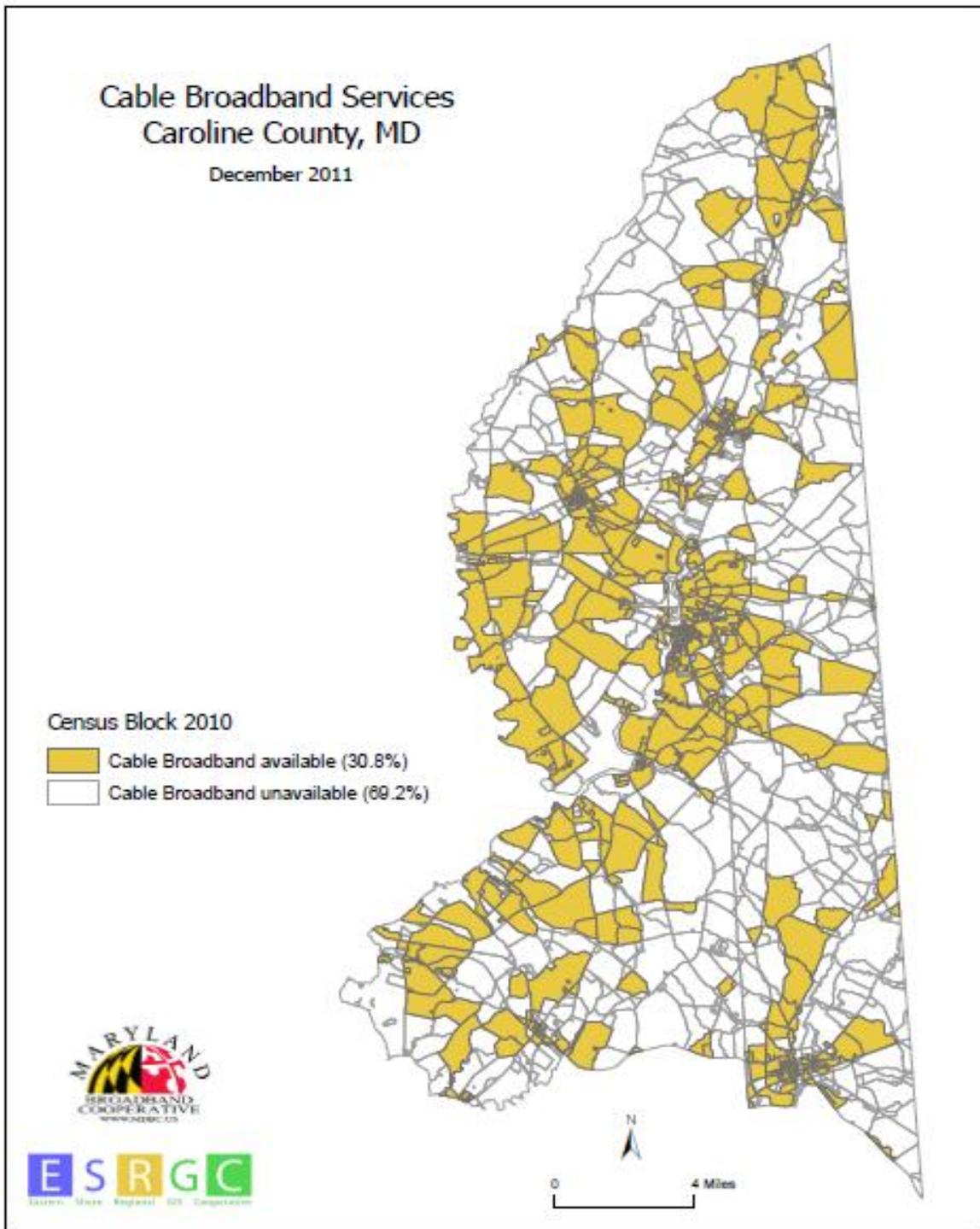
Map 7: Cecil County Other Copper Wireline Broadband Services



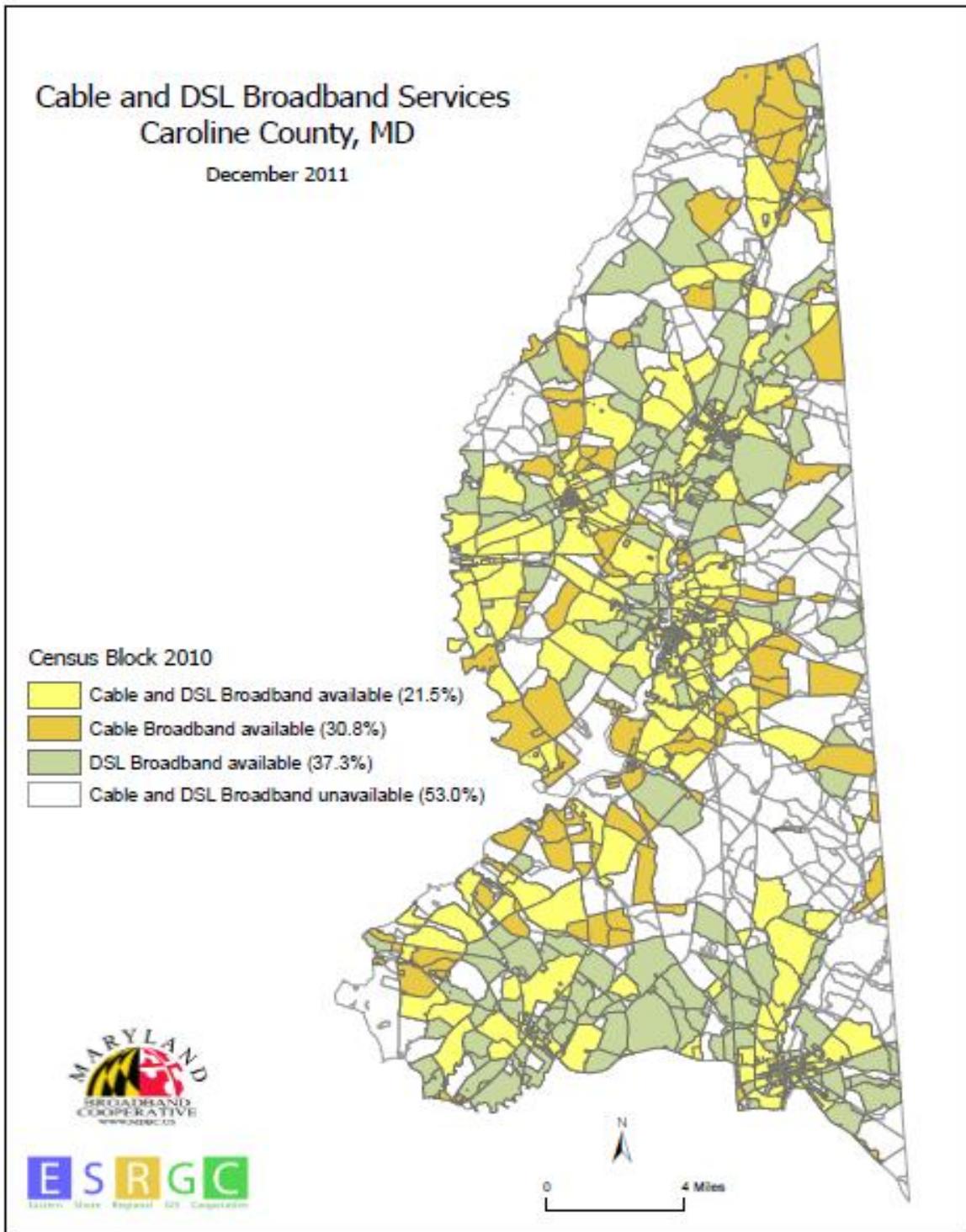
Map 8: Cecil County Wire line Broadband Services



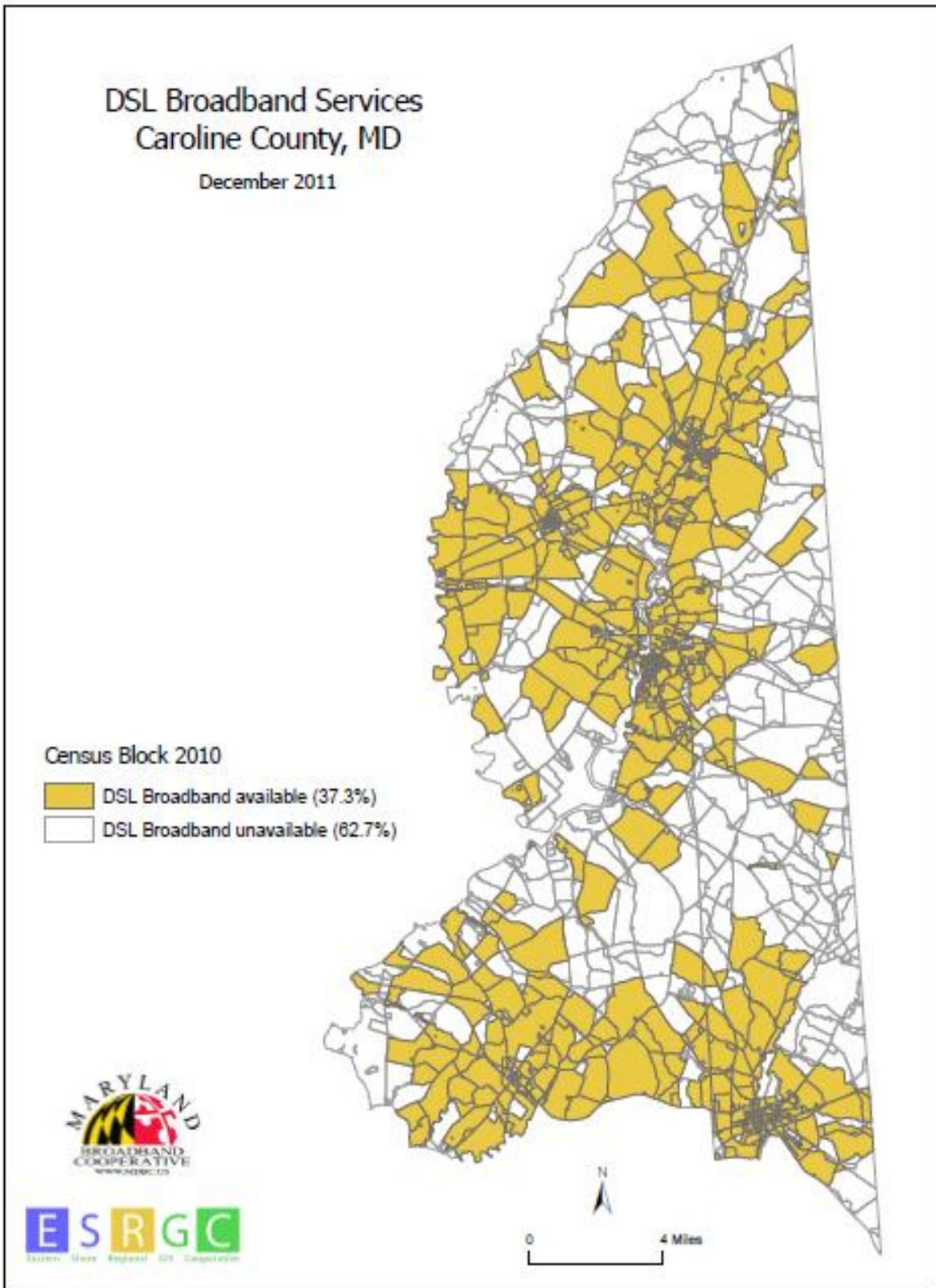
Map 9: Caroline County Cable Broadband Services



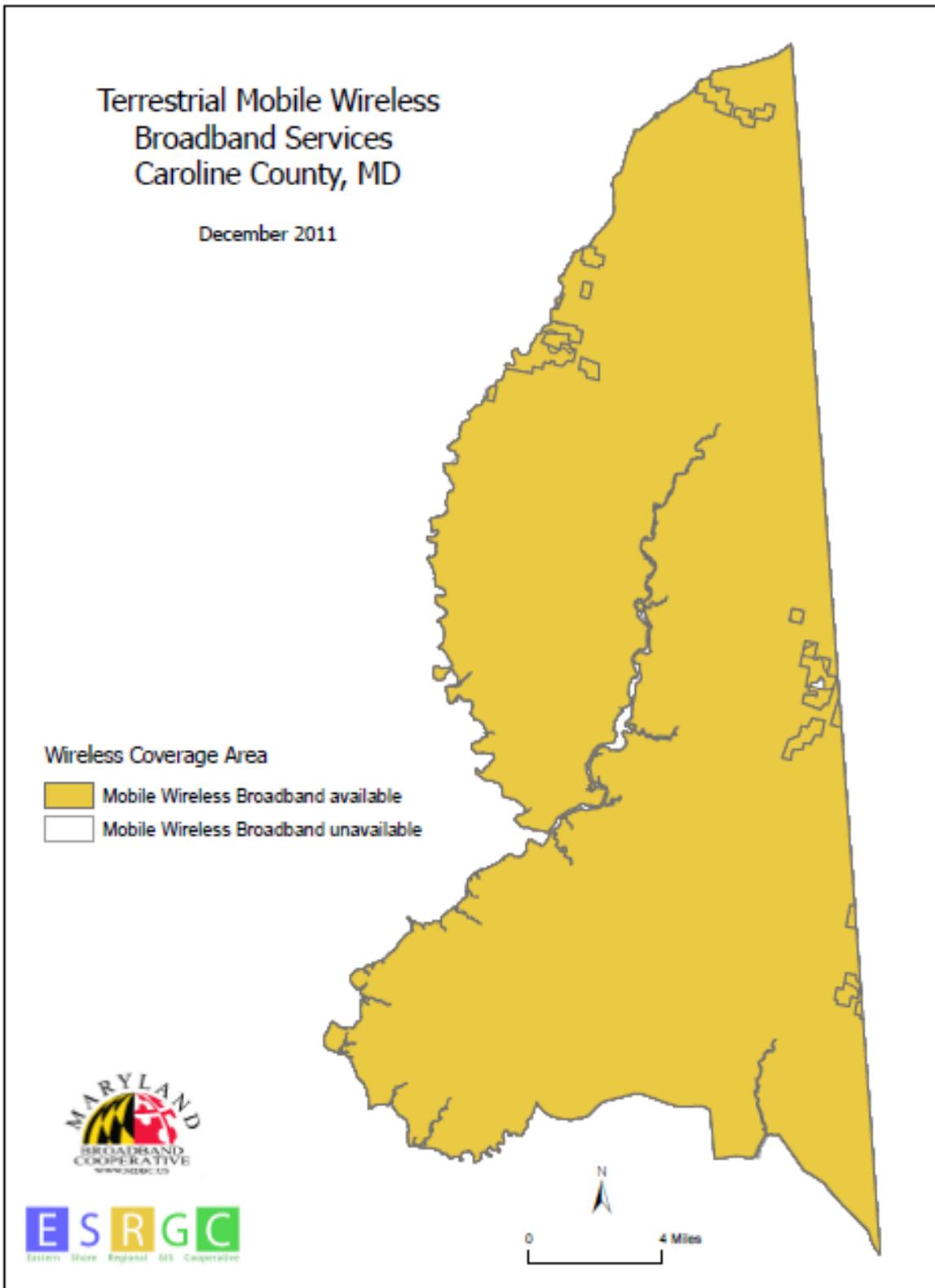
Map 10: Caroline County Cable and DSL Broadband Services



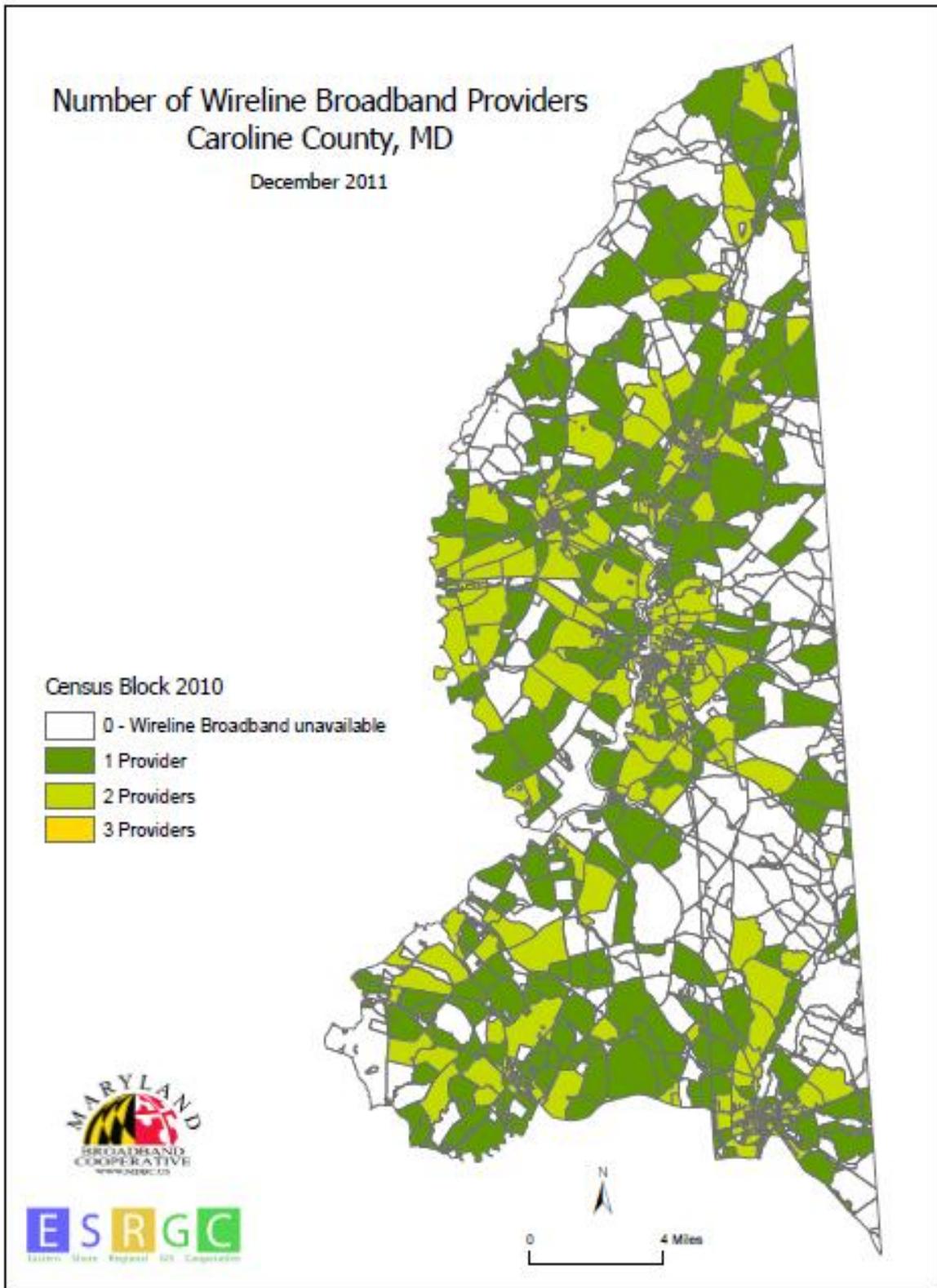
Map 11: Caroline County DSL Broadband Services



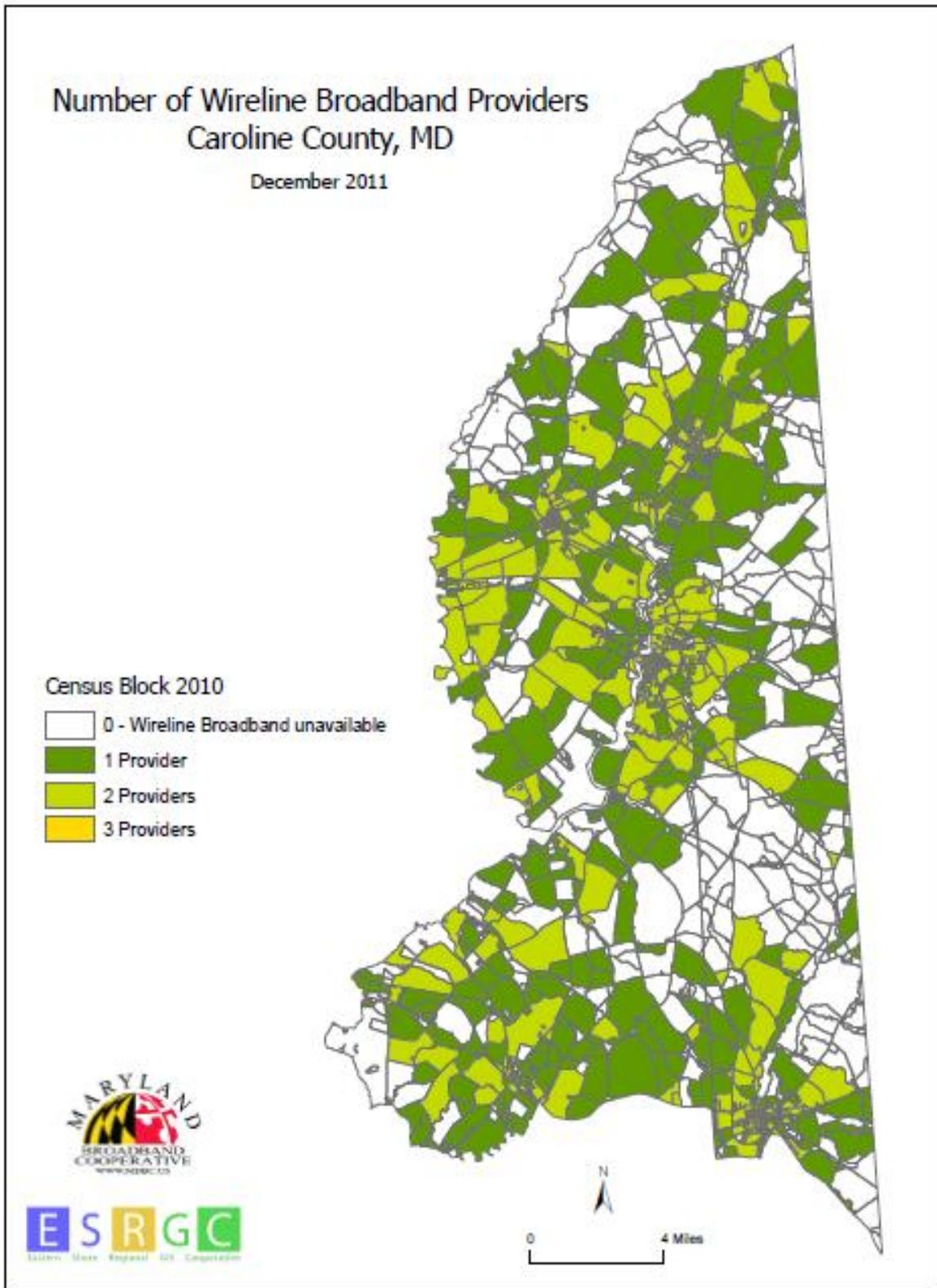
Map 12: Caroline County Terrestrial Mobile Wireless Broadband Services



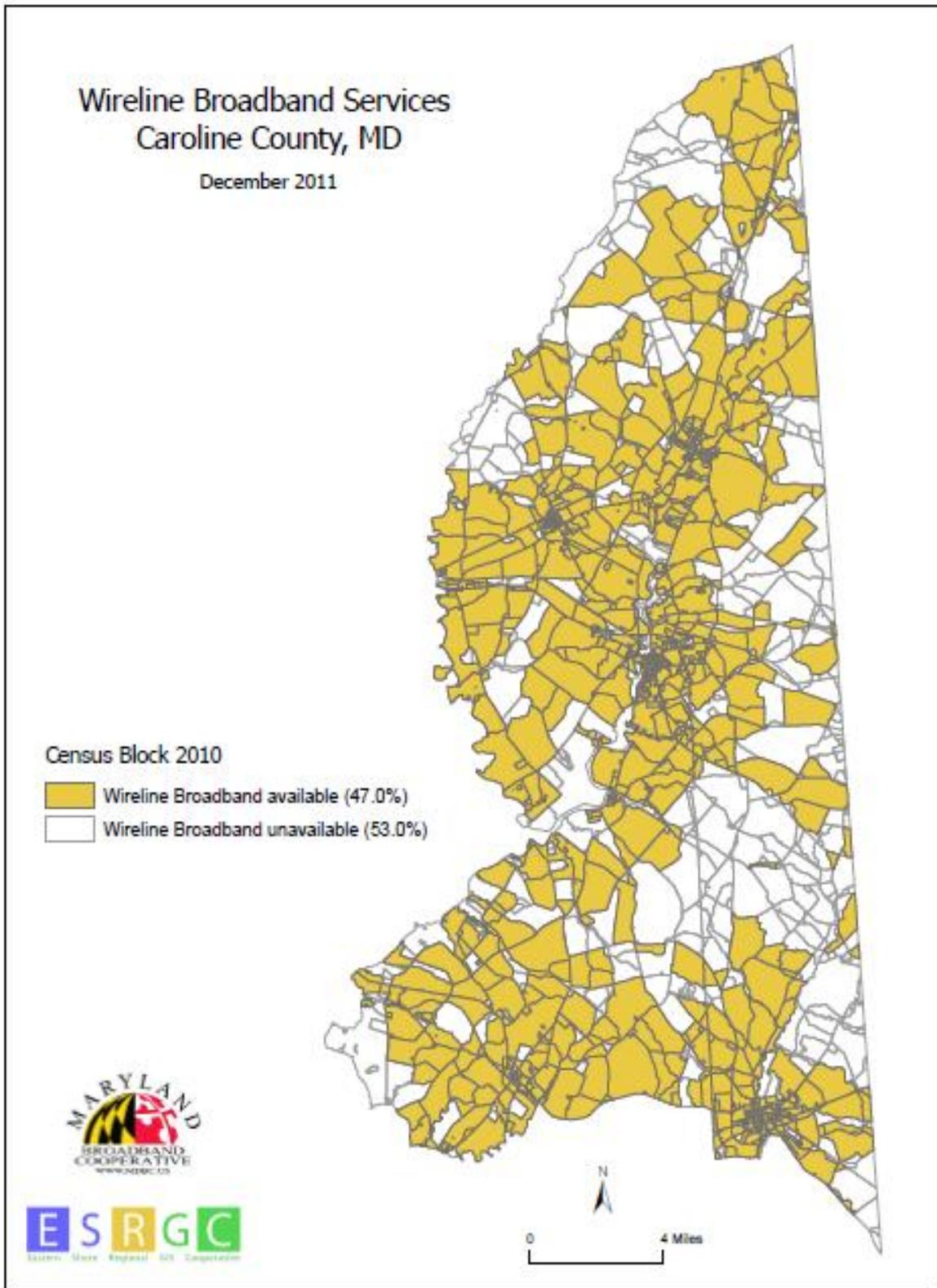
Map 13: Caroline County Number of Wireline Broadband Providers



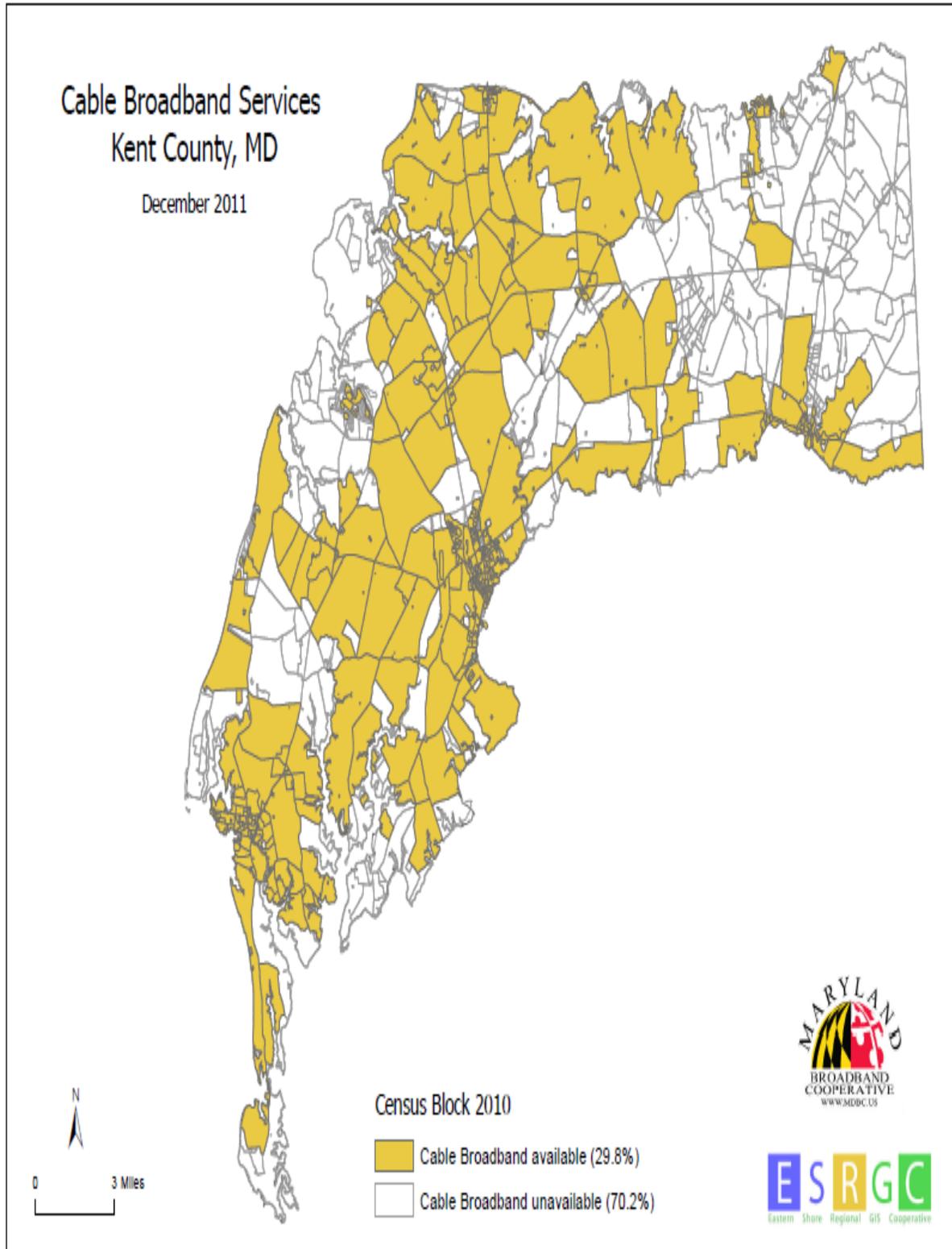
Map 14: Caroline County Number of Wireline Broadband Providers



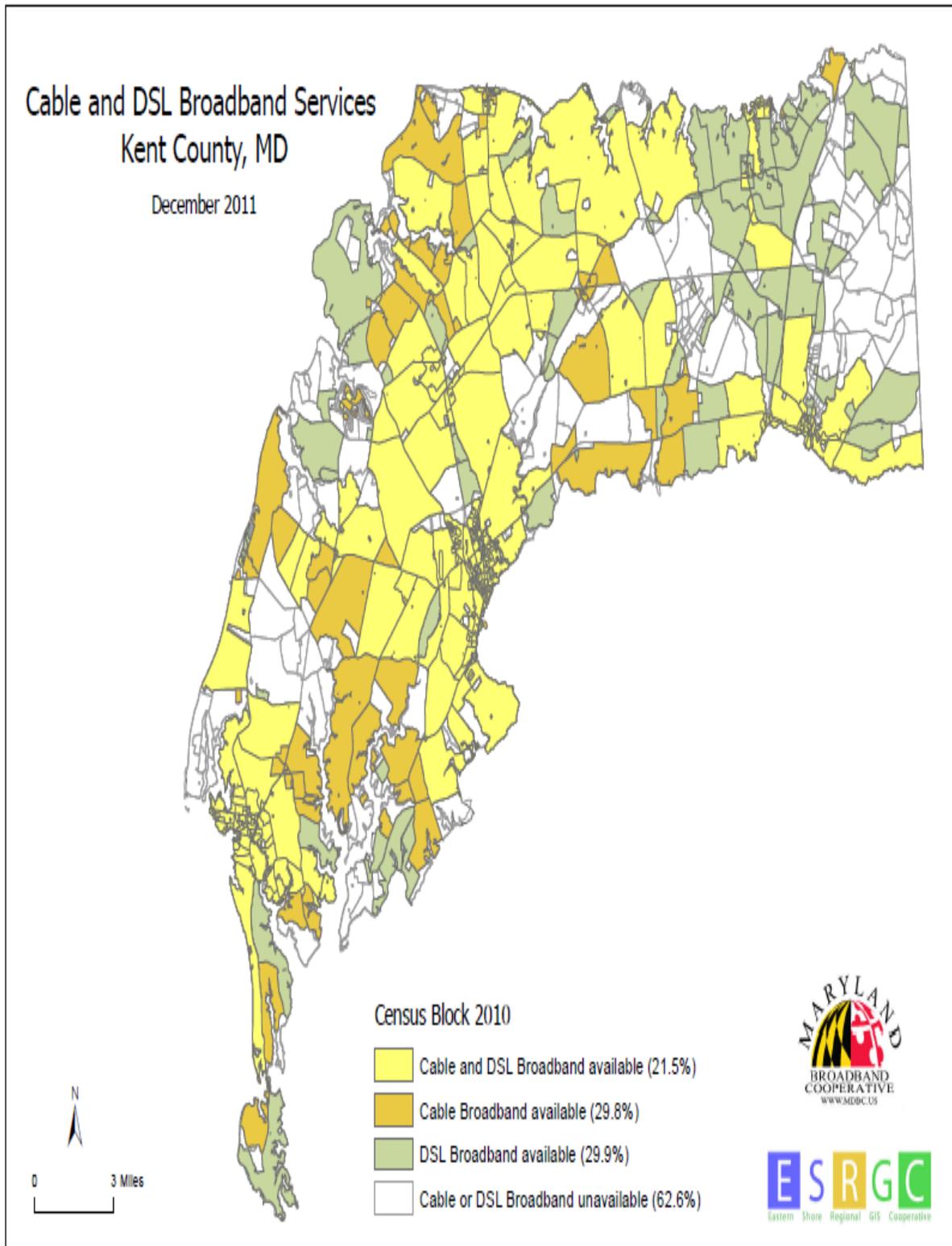
Map 15: Caroline County Wire line Broadband Services



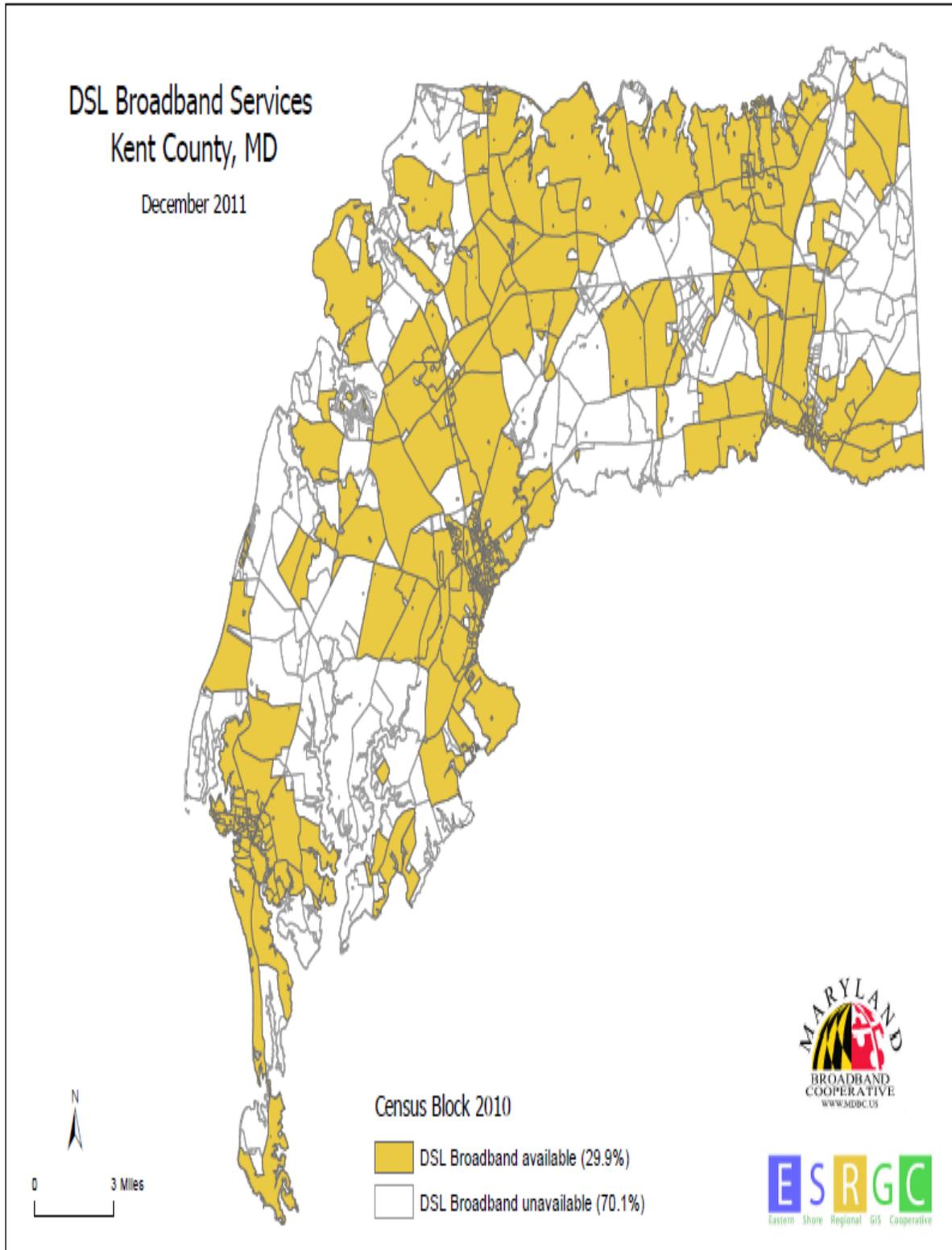
Map 16: Kent County Cable Broadband Services



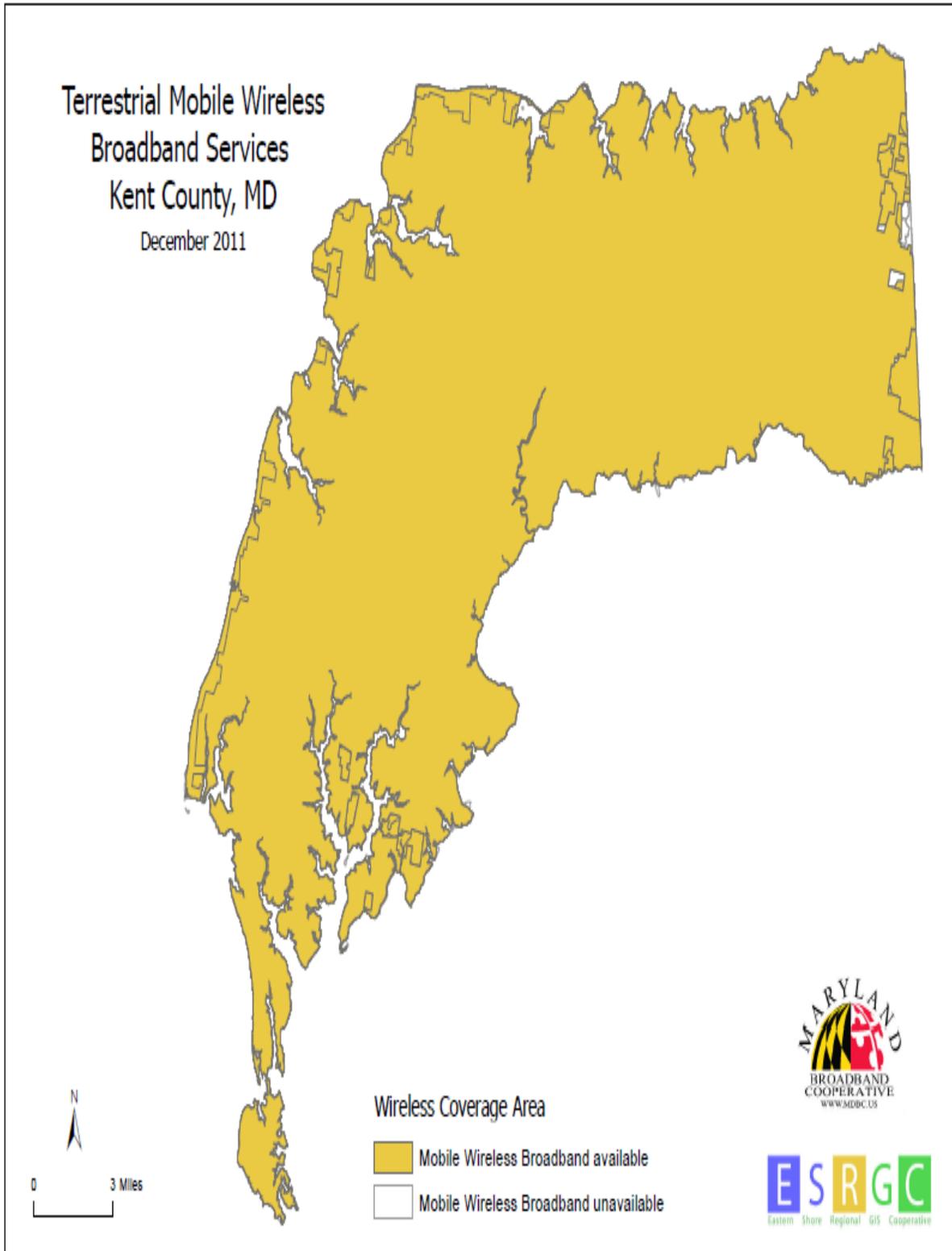
Map 17: Kent County Cable and DSL Broadband Services



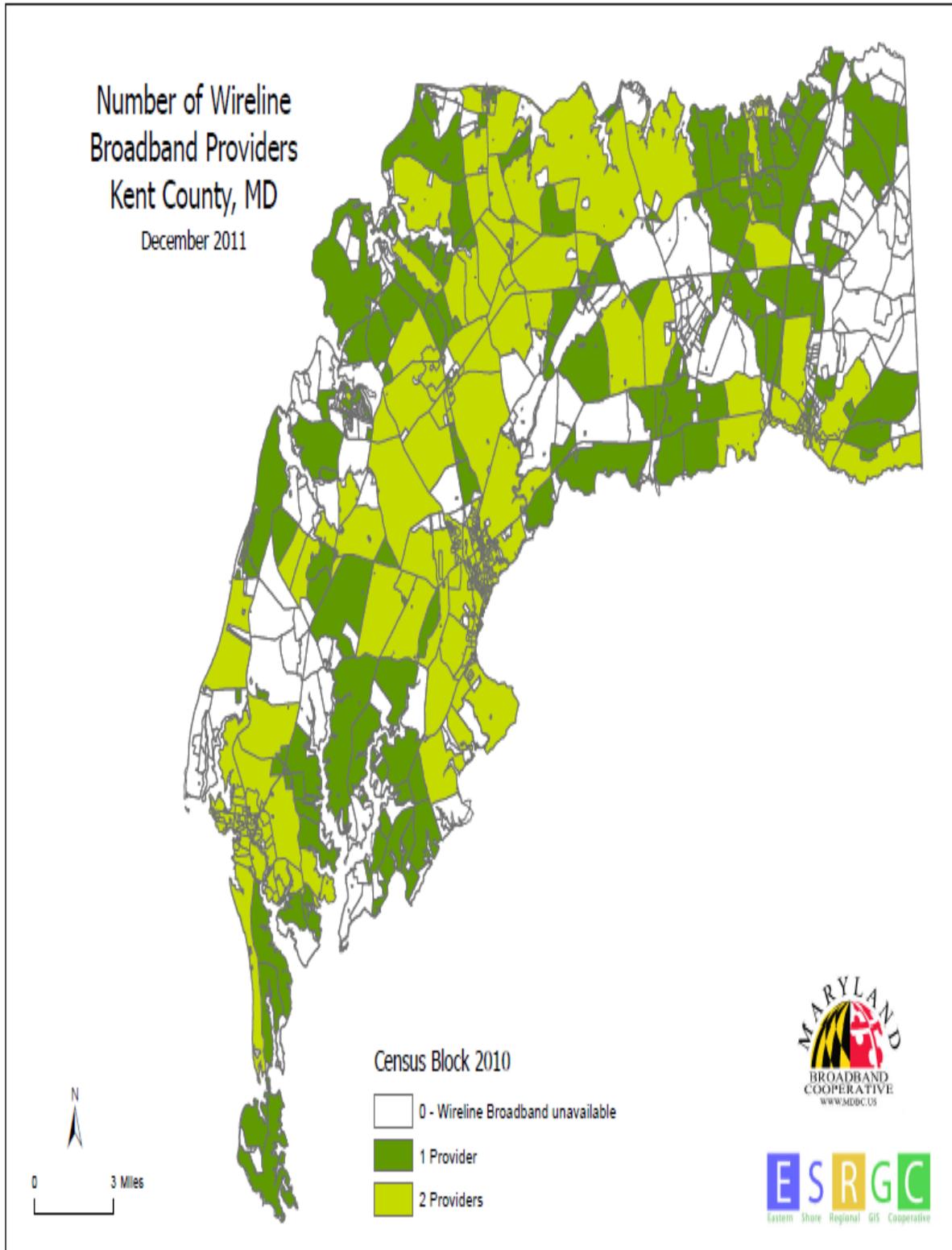
Map 18: Kent County DSL Broadband Services



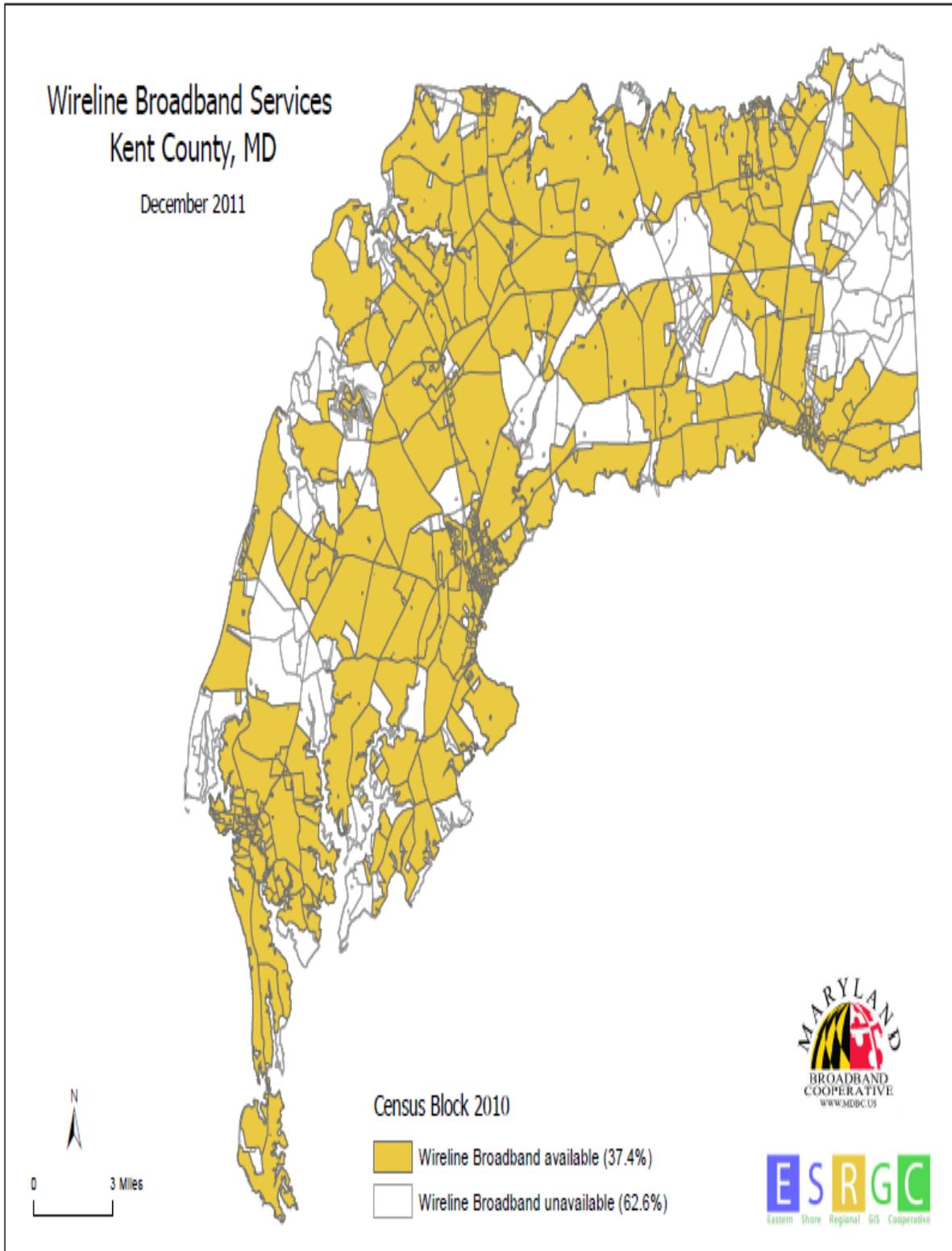
Map 19: Kent County Terrestrial Mobile Wireless Broadband Services



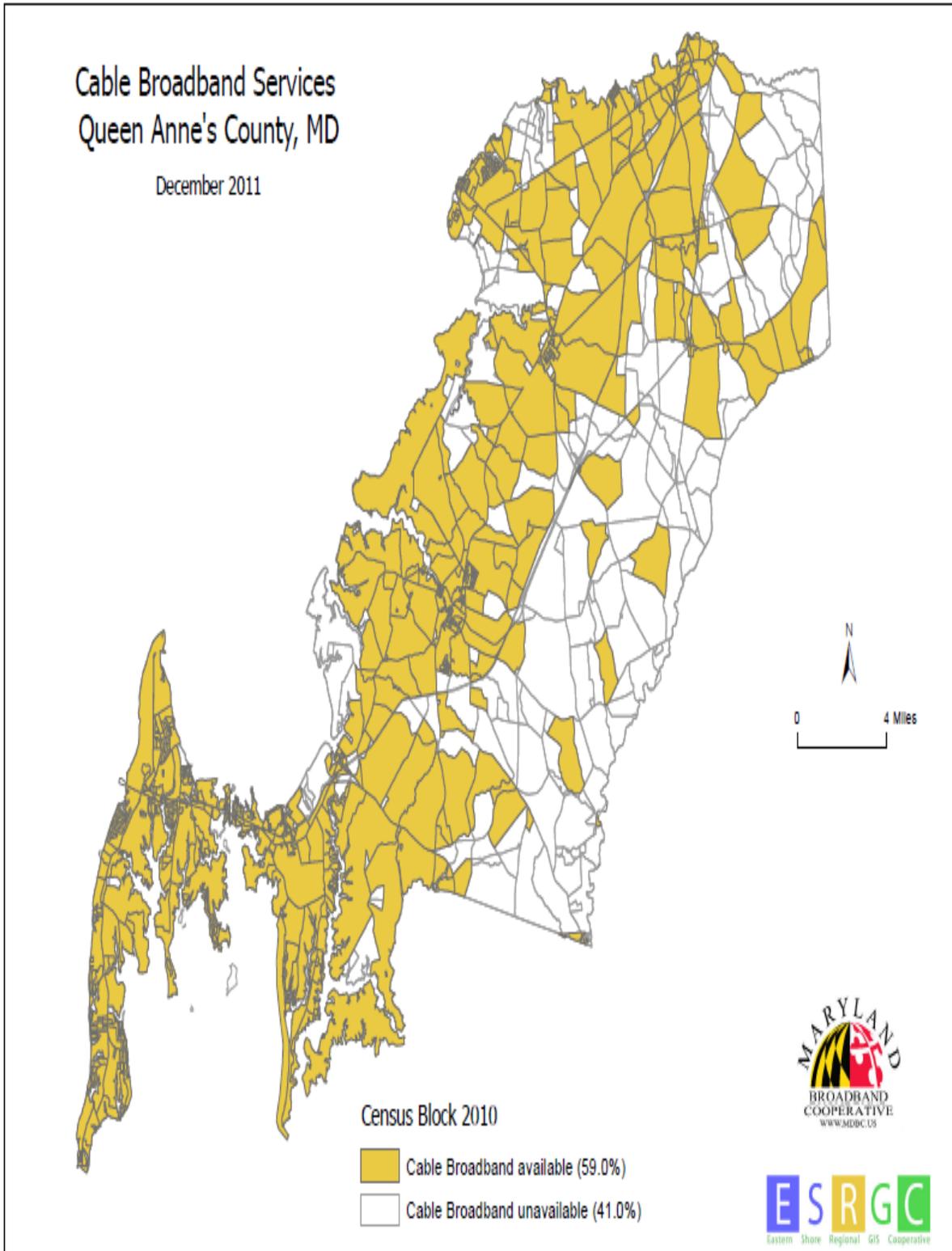
Map 20: Kent County Number of Wireline Broadband Providers



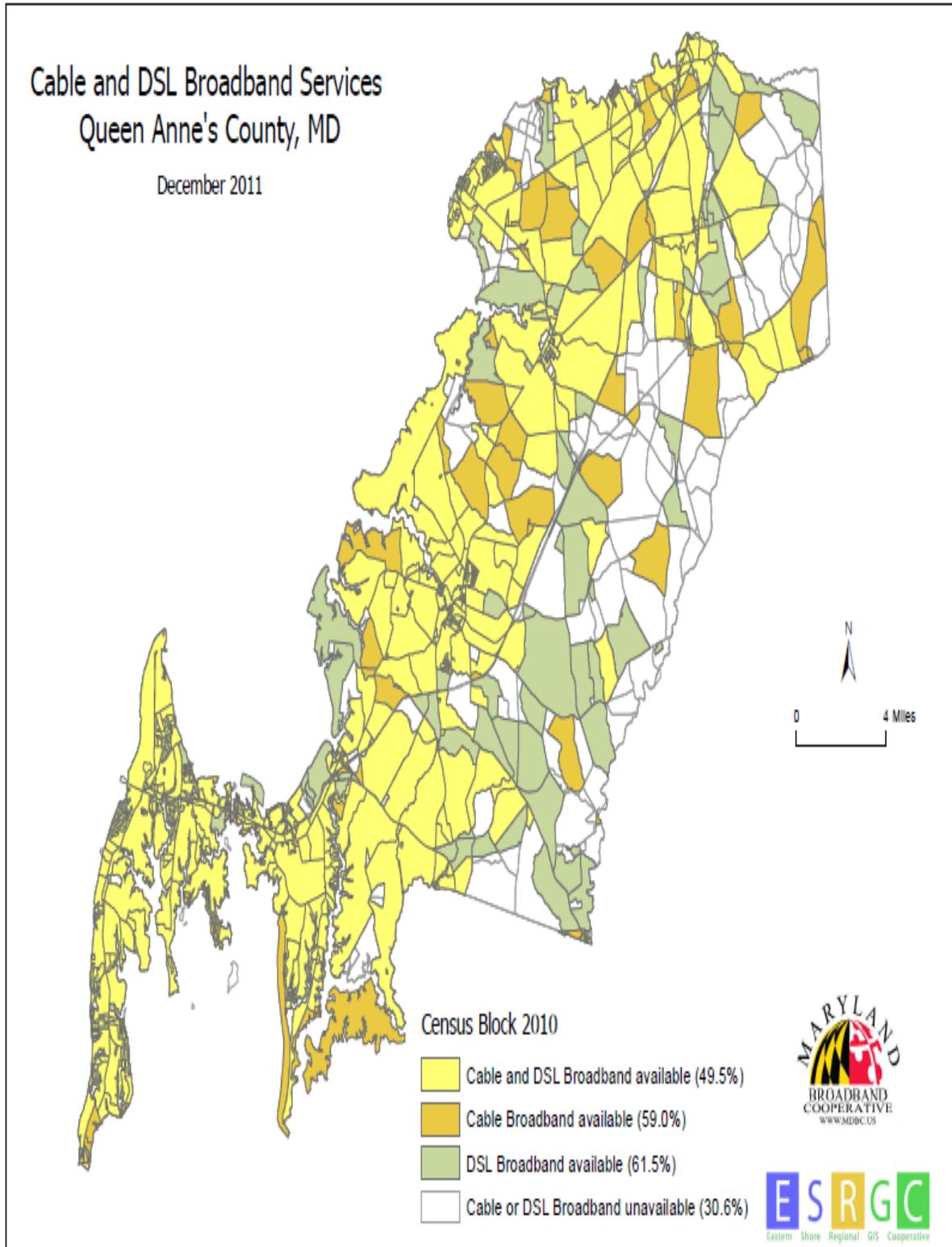
Map 21: Kent County Wire line Broadband Services



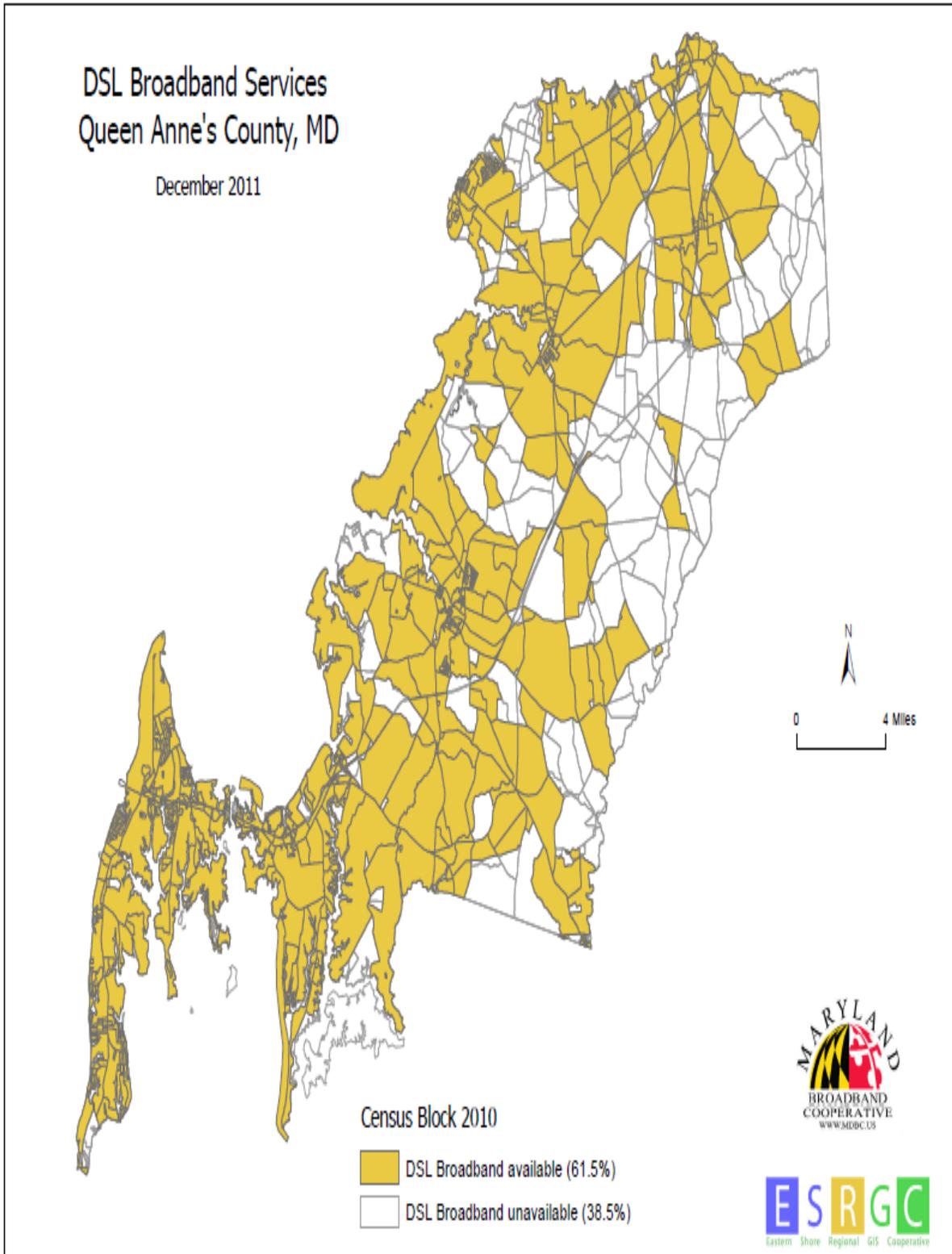
Map 22: Queen Anne's County Cable Broadband Services



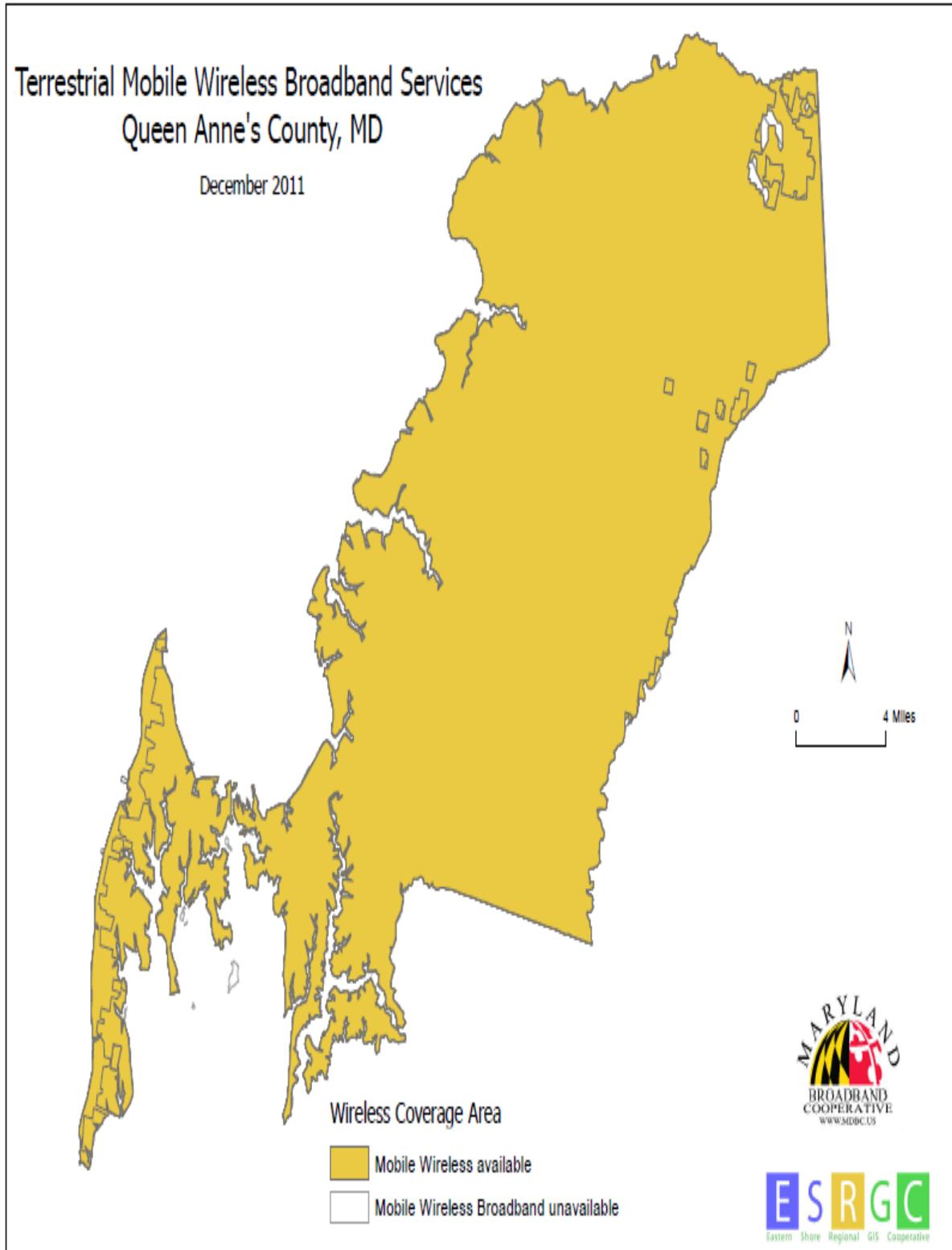
Map 23: Queen Anne's County Cable and DSL Broadband Services



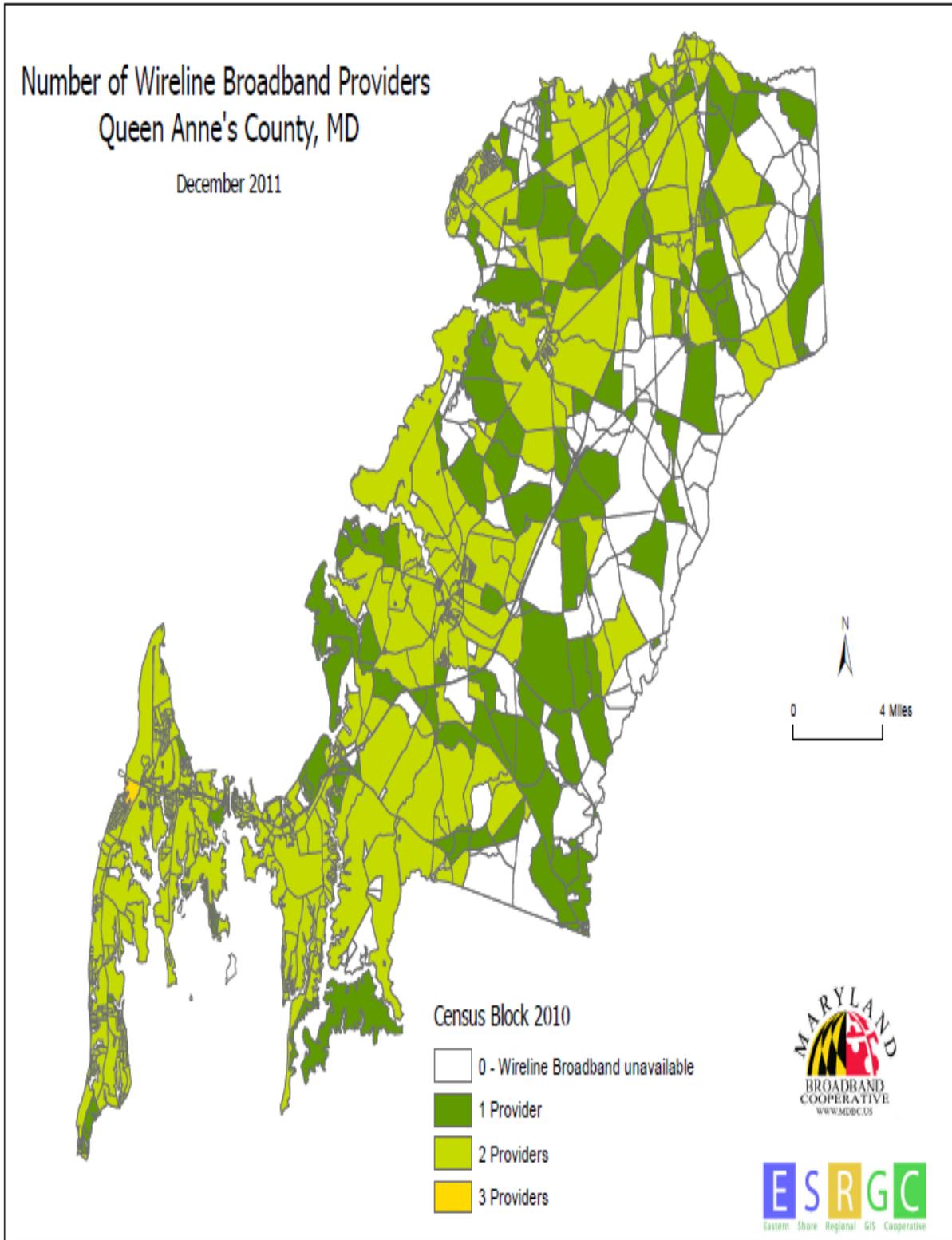
Map 24: Queen Anne's County DSL Broadband Services



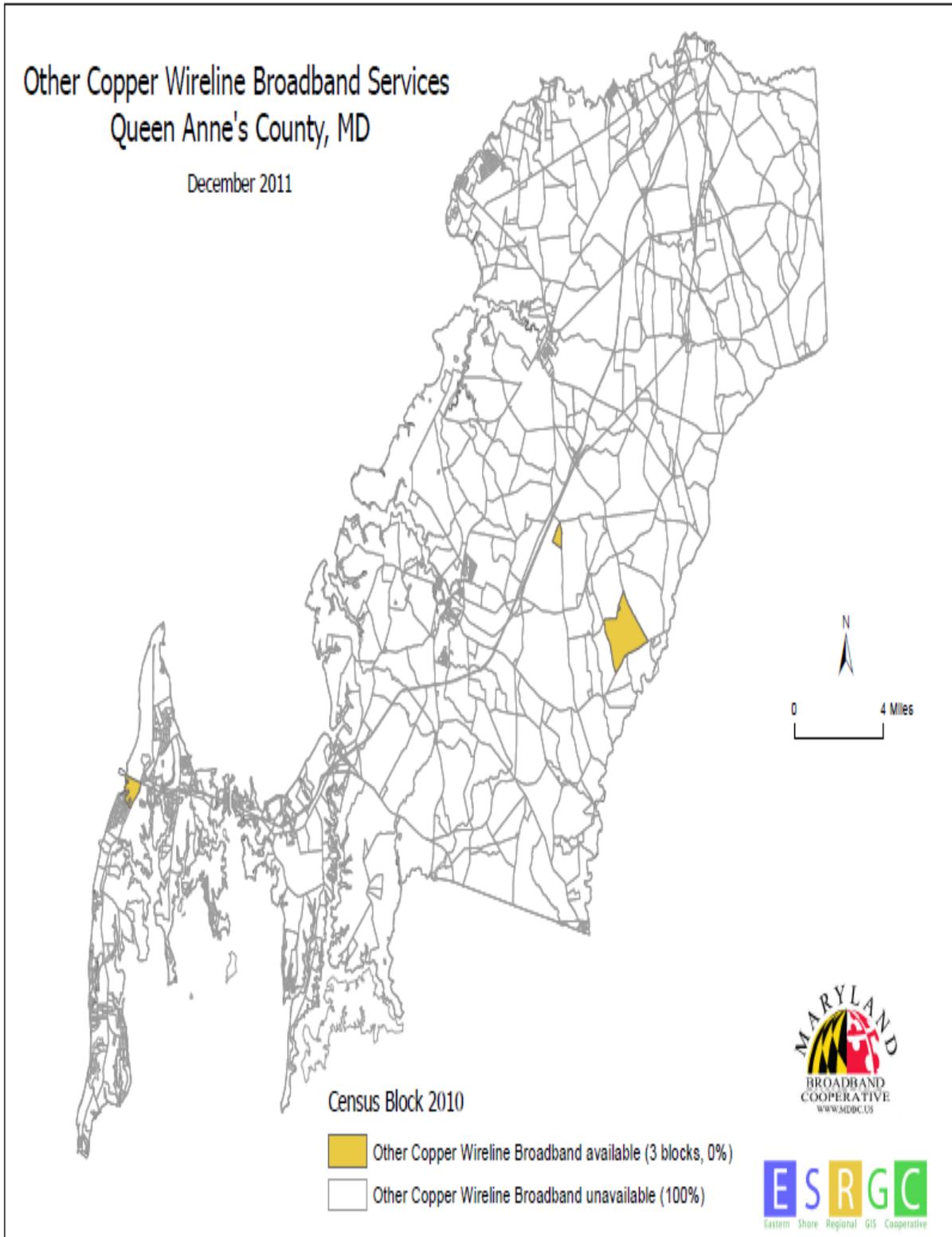
Map 25: Queen Anne's Terrestrial Mobile Wireless Broadband Services



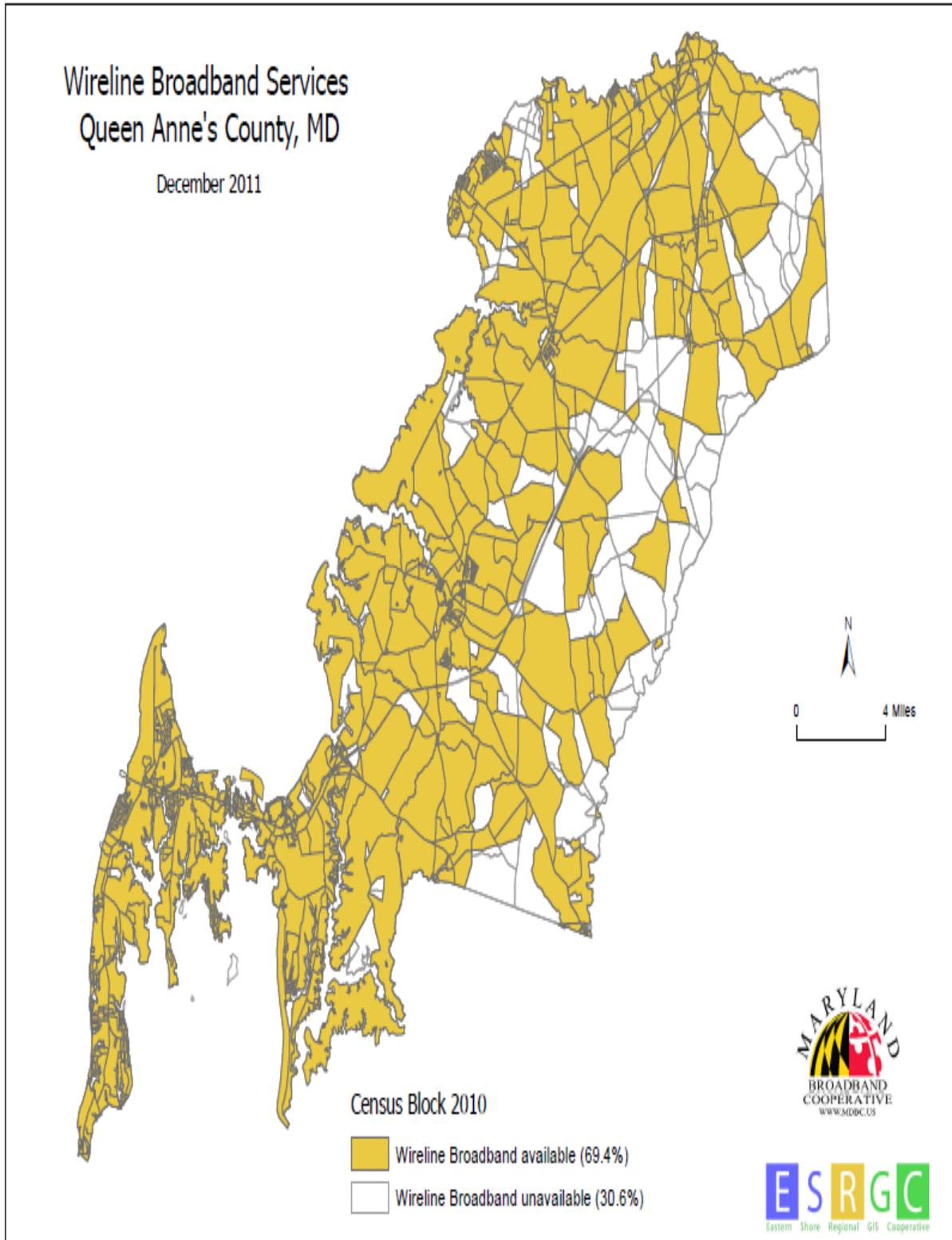
Map 26: Queen Anne's County Number of Wireline Broadband Providers



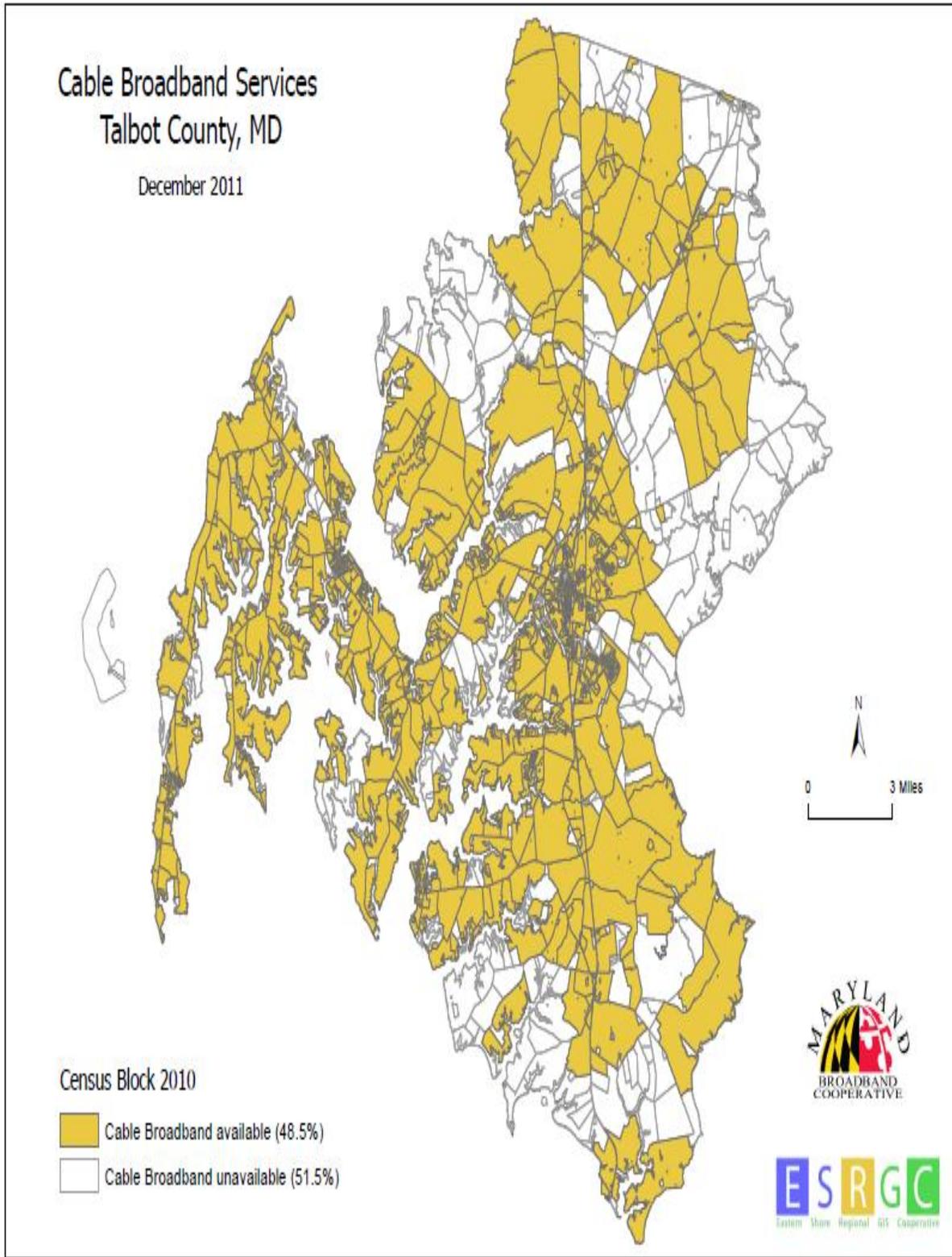
Map 27: Queen Anne's County Other Copper Wireline Broadband Services



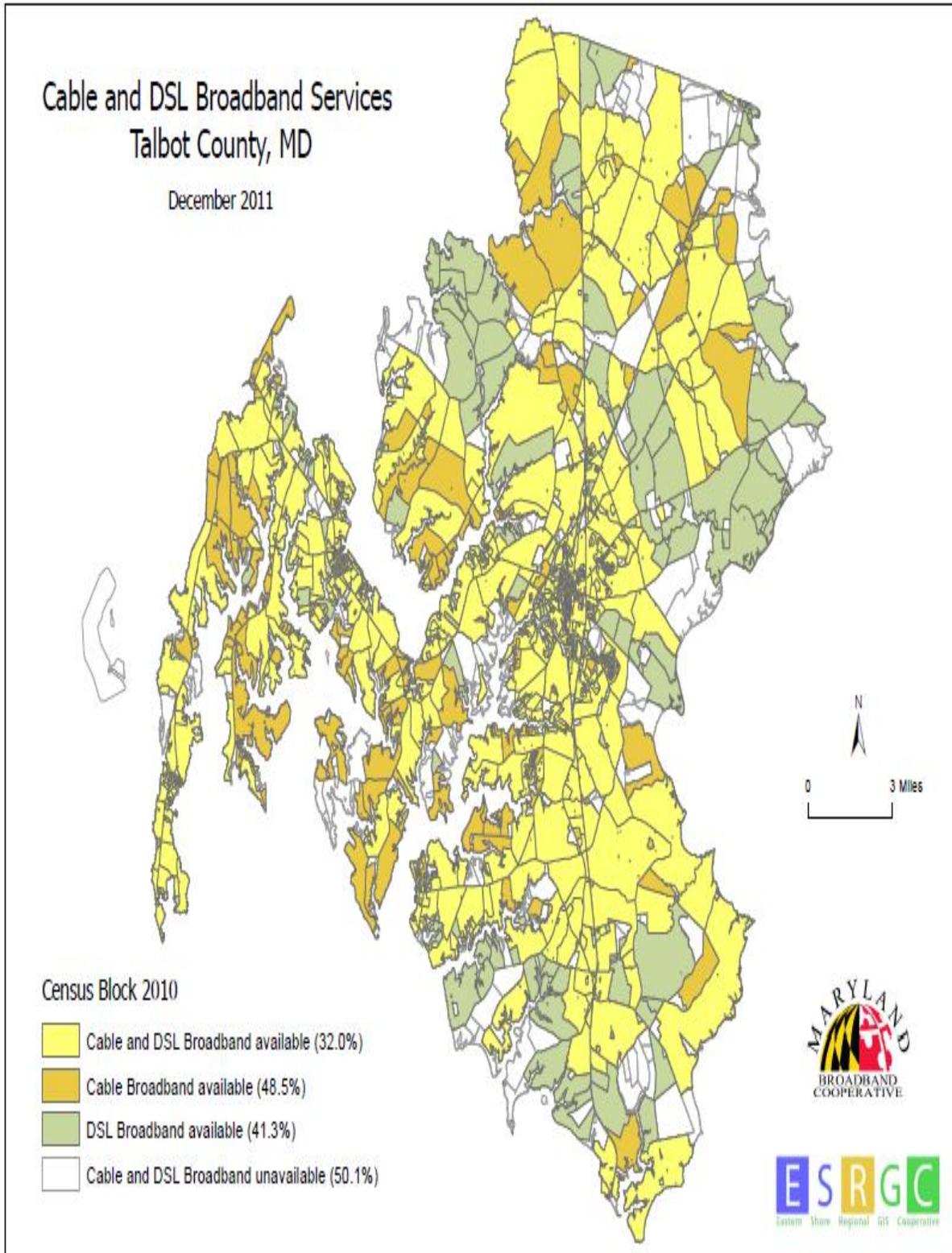
Map 28: Queen Anne's County Wireline Broadband Services



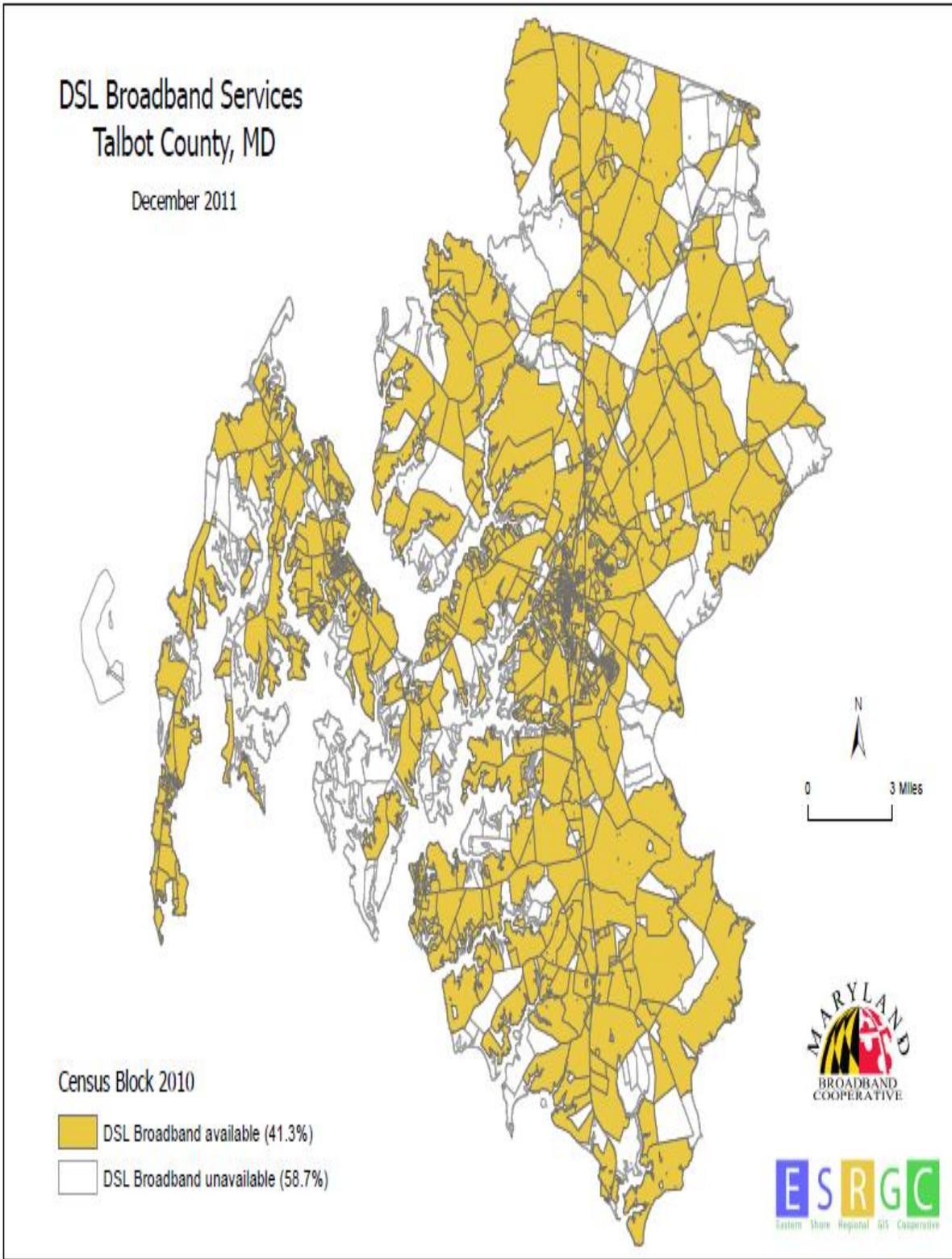
Map 29: Talbot County Cable Broadband Services



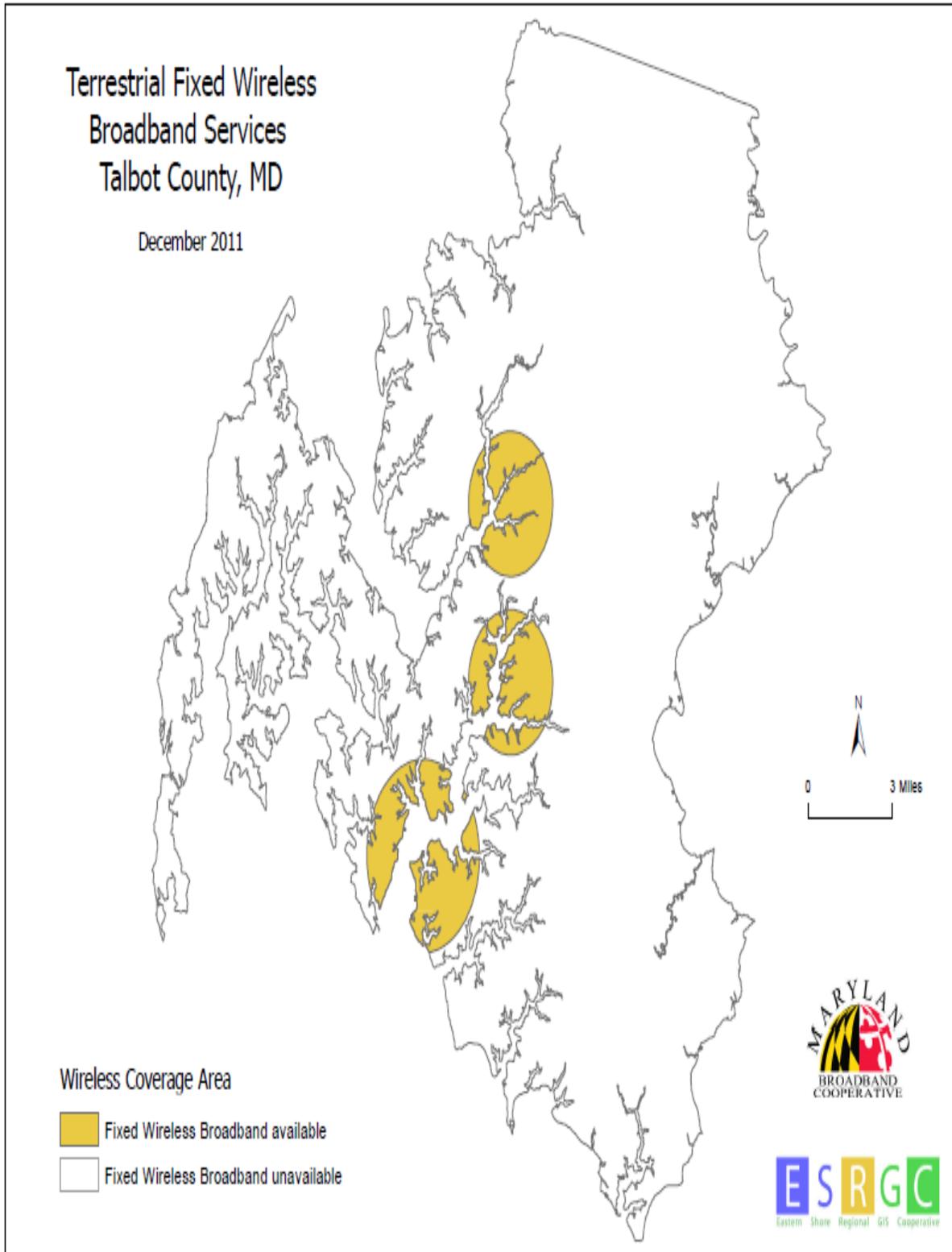
Map 30: Talbot County Cable and DSL Broadband Services



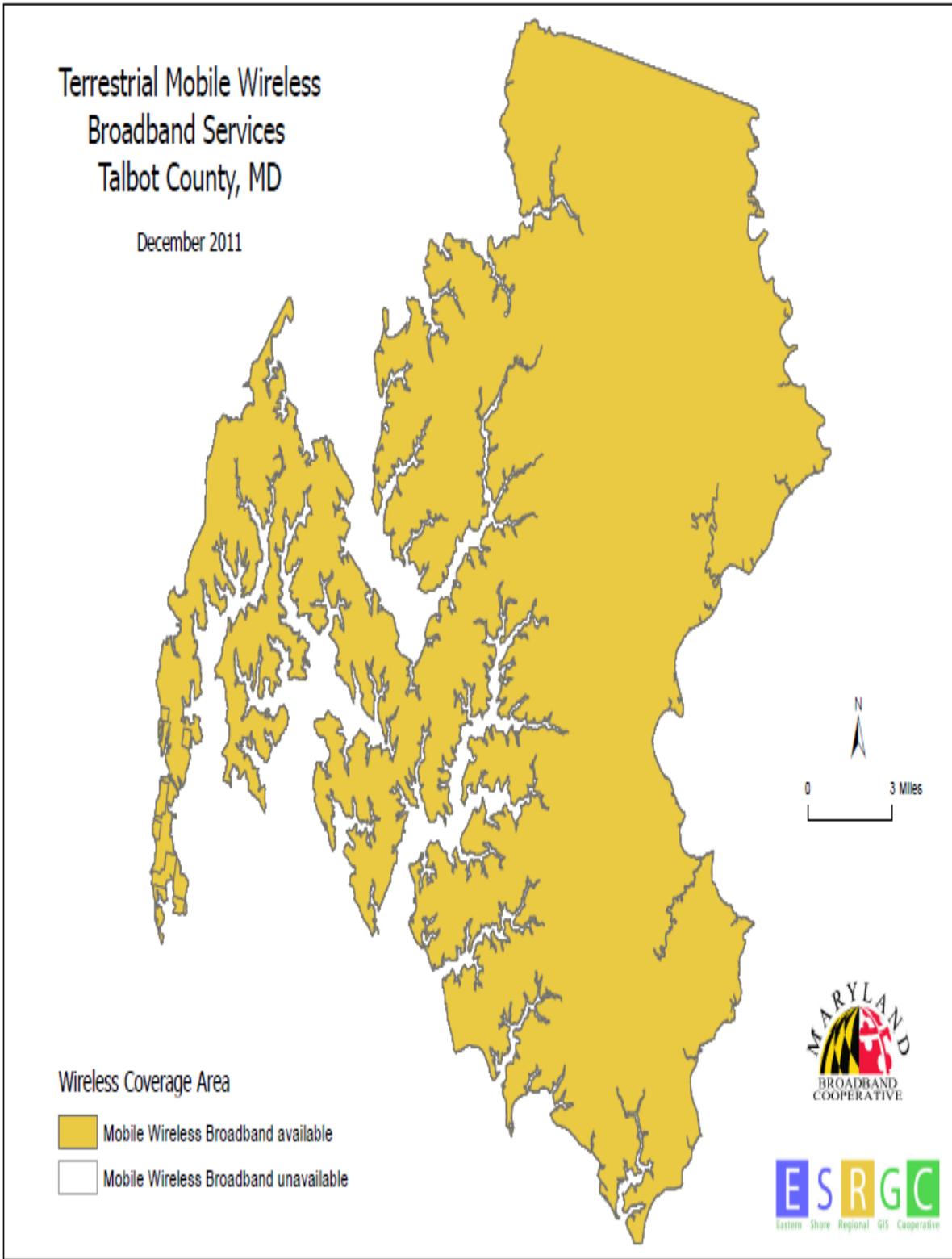
Map 31: Talbot County DSL Broadband Services



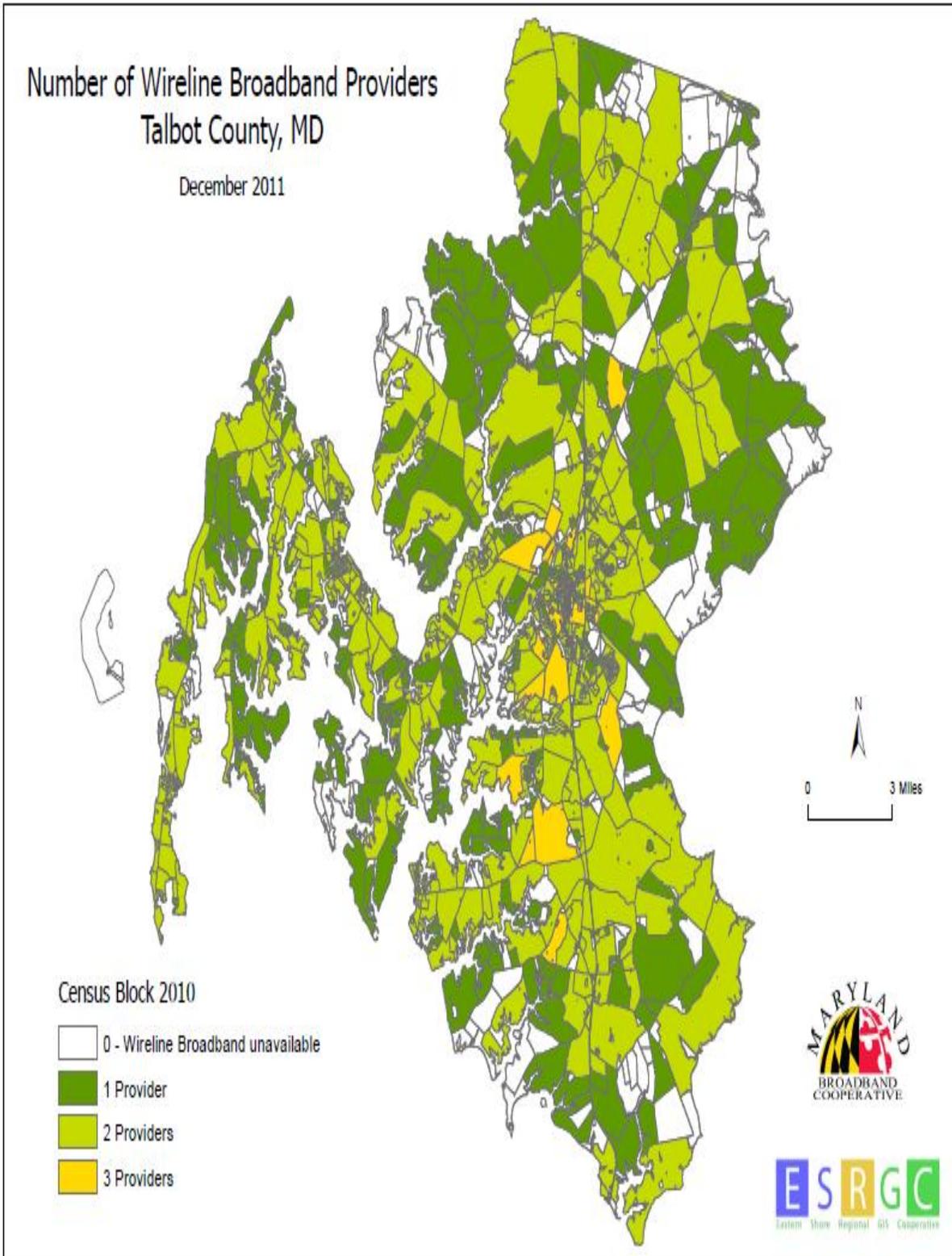
Map 32: Talbot County Terrestrial Fixed Wireless Broadband Services



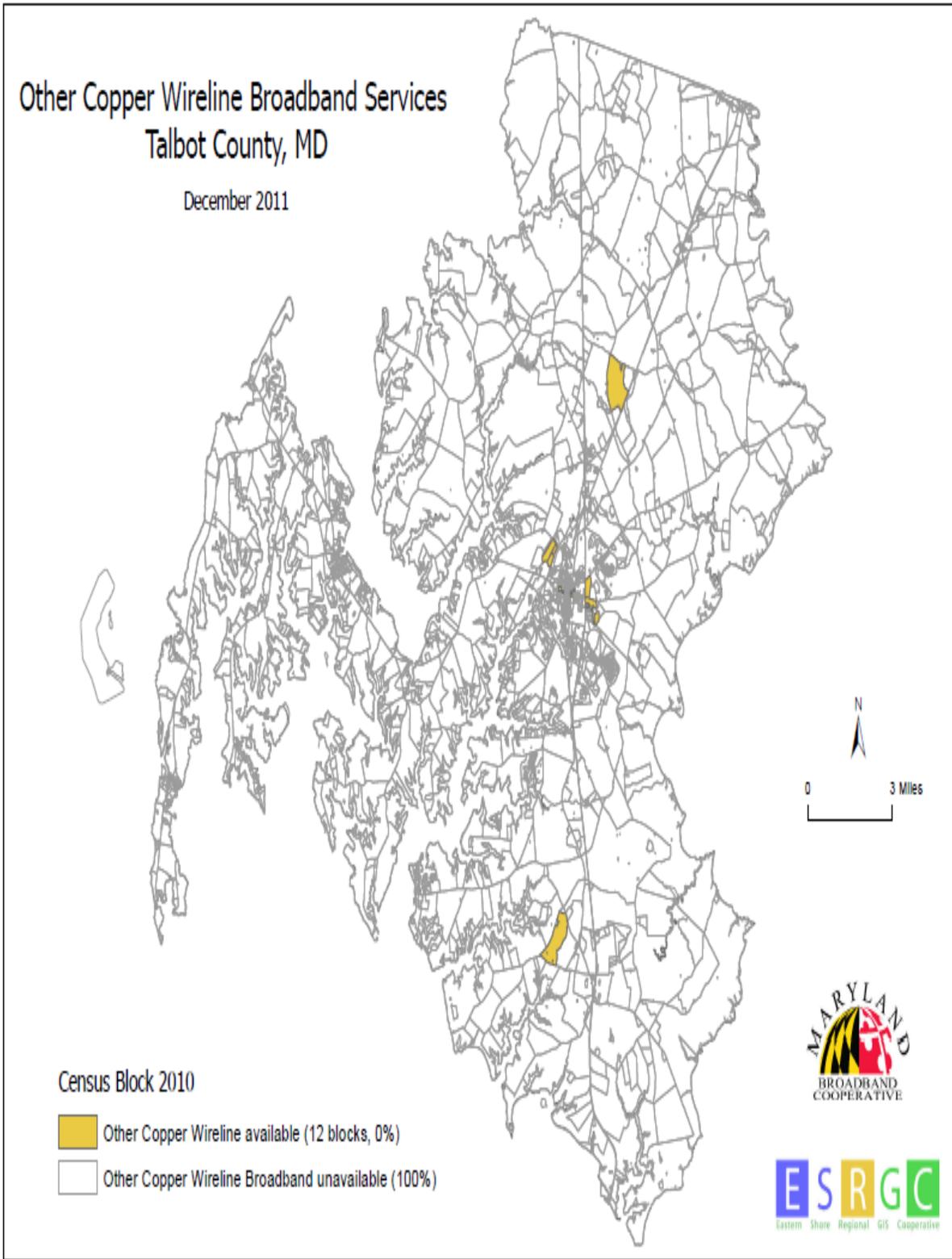
Map 33: Talbot County Terrestrial Mobile Wireless Broadband Services



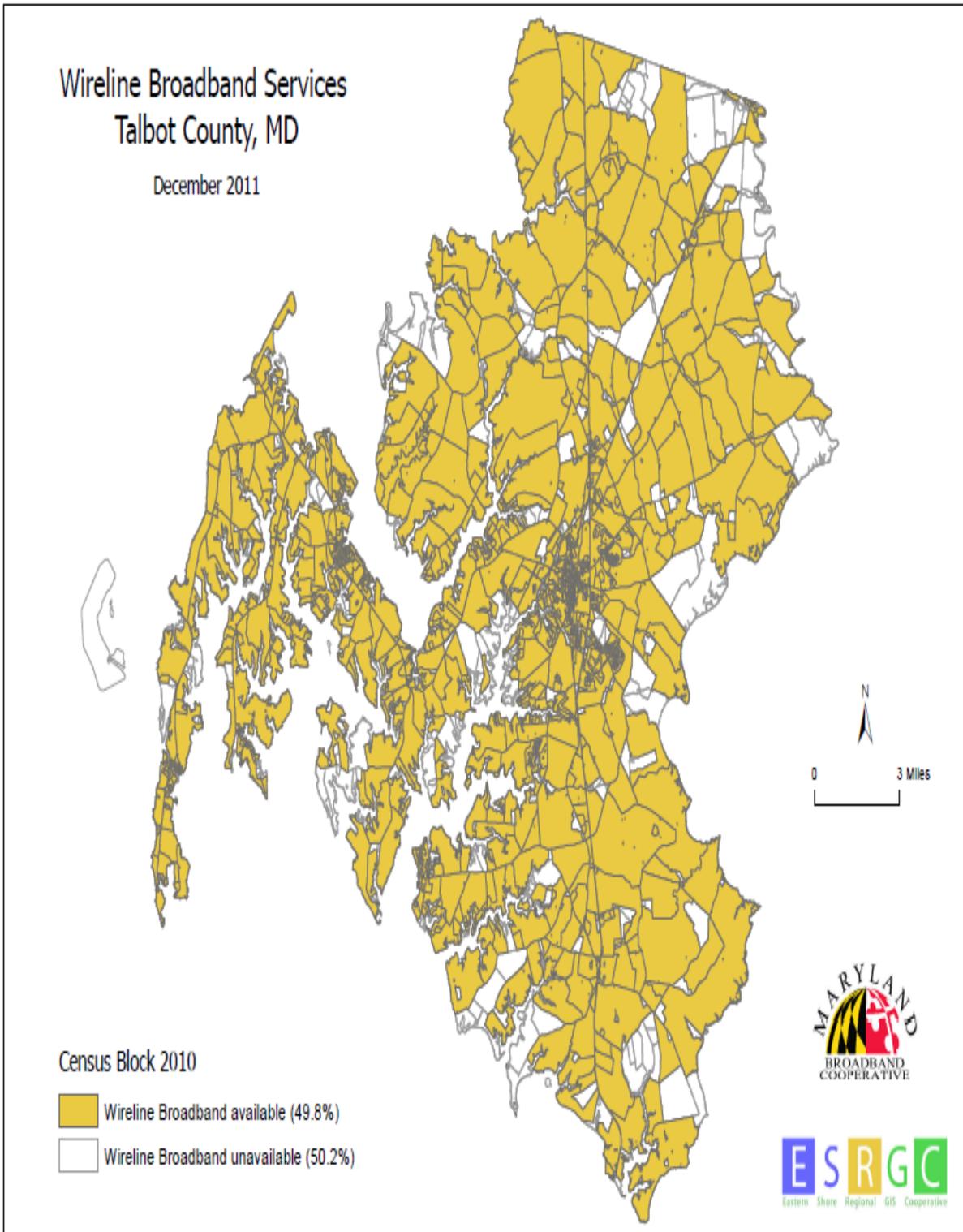
Map 34: Talbot County Number of Wireline Broadband Providers



Map 35: Talbot County Other Copper Wireline Broadband Services



Map 36: Talbot County Wire line Broadband Services



Appendix C: Best Practices

The project in Singapore enlists intensive government interaction to support in their broadband goals and objectives. However, ONE broadband initiative in Singapore is very similar to One Maryland Broadband Network (OMBN) and they began issuing Facilities-Based Operation (FBO) and Service-Based Operation (SBO) licenses [31]⁴³.

- FBO licenses could be applied to the Maryland initiative by allowing anchor institutions to be responsible for issuing licenses to other institutions or third parties looking to connect to their fiber and would be paid a fee to use the connection.
- The SBO licenses would be applicable only to other users trying to connect to broadband service on the property of an anchor institution or a separate entity with access.

A perfect example of Service-Based operations would be a land owner extending service to another portion of the land to a third party. From a cost structure perspective, this would be feasible for anchor institutions because the fee paid by other users could be used to maintain the connection and pay for the anchor institutions' service bill. The margins of the license fee would have to be supported by a cost benefit analysis to ensure maintenance and equipment costs are of little to no expense to the anchor institution. The motive in Singapore for utilizing the license agreements is to promote pure competition among service providers in the region. Under the license system potential users would need to apply for the license and be approved by the providing firm or in this case anchor institution. The intricacies of a licensed user system used by Singapore would need to be tested based on potential acceptance, and anchor institutions' capability of employing a person to manage the license agreements. Similarly, the Canadian broadband initiative suggests, "The Government will continue to consult extensively with Canadians and Canadian businesses to ensure the success of the Economic Action Plan. The federal government provides up to 50 percent of eligible project costs for Internet Service Providers that have been selected to deploy broadband infrastructure and services to unserved/underserved areas. The other 50 percent of

⁴³ IDA Singapore - Technology – Overview; IDA Singapore; Web. 13 Feb. 2012.

<http://www.ida.gov.sg/Technology/20060417141828.aspx>

costs, or more, is borne by the applicants. First Nations projects are eligible for up to 100% federal funding.”

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Glossary

3 GPP	Third Generation Partnership Program
4G	Fourth Generations
4G LTE	Fourth Generation Long Term Evolution
ARRA	American Recovery Reinvestment Act
BTOP	Broadband Technology Opportunities Program
CAI	Community Anchor Institutions
DBED	Department of Business and Economic Development
DoIT	Department of Information Technology
DSL	Digital Subscriber Line
DWDM ring	Dense wavelength division multiplexing ring
EDA	Economic Development Administration
FTTC	Fiber to the Curb
FTTH	Fiber to the Home
Gbps	Giga Bit Per Second
ISP	Internet Service Provider
Kbps	Kilo Bit Per Sec
LTE	Long Term Evolution
Mbps	Mega Bit Per Second
Mb/s	Mega Bit Per Second
MdBC	Maryland Broadband Cooperative
MDOT	Maryland Department of Transportation
MSEC	Mega Second
NTIA	National Telecommunication and Information Administration
OMBN	One Maryland Broadband Network
POPS	Points of Presence
ROADM	Reconfigurable Optical Add-Drop Multiplexer
Tier 1	Level 1
USM	University System of Maryland
Voip	Voice over Internet Protocol
Wi-Max	Worldwide Interoperability for Microwave Access